THE NEW YORK

JOURNAL OF MEDICINE

FOR JANUARY, 1858.

PART FIRST.

ORIGINAL COMMUNICATIONS.

ART. I.—*On Epicystotomy, with the Report of a Case in which this Operation was successfully performed, under the most unfavorable circumstances.* [With Lithographs.] By E. NOEGGERATH, M. D., of N. Y.

THE value of the high operation for removing stone from the bladder is underrated by many of the best authors both in this country and in Europe. Therefore, it must be of importance to bring before the profession as many cases as possible, in order to establish the true position of this operation. But aside from this consideration, the following case contains in itself facts of general interest sufficient to justify its publication.

Case.—Stephen B——, of New York city, was a healthy child when born, and continued to enjoy good health until the age of three years (in the spring of 1852), when his parents noticed a change in his generally lively disposition. He seemed to give up his play, complained of fatigue in the limbs, and became careless, as his parents supposed, in regard to his urine, wetting his bed at night, and even his clothes during the day. The family physician was called in, who ascribed these symptoms to the rapid growth of the boy, and quieted the parents with the assertion that he would out-grow the habit. But, during the winter of 1852, and in the spring of 1853, he got much worse, and a mucous sediment was remarked in his urine, to the amount of one-eighth of the whole quantity. The doctor, consequently, pronounced the disease catarrh in the bladder, and several remedies were administered with varied success. The sediment in the urine decreased considerably

during the spring of 1854, and great hopes of perfect recovery were entertained. But in the fall, the boy relapsed, and the mucous sediment not only increased, but was joined by a purulent discharge, and severe paroxysms of pain in the region of the bladder and penis.

In the *spring of* 1855, two physicians of the very first reputation examined the bladder with instruments, and pronounced the case to be chronic inflammation of the mucous membrane of the bladder. The little patient was blistered the whole length of the spine, and a seton was inserted above the symphysis pubis. This was done during the winter of 1856, but without the least benefit. He had now ceased to attend school, and was dragging out a miserable existence. It was very singular that the boy could not sit on any flat surface, such as a chair, but always sat on something sharp, so as to support the perineum; and in walking, he supported the same parts with his hand. During the summer of 1856, the spasms of pain were growing more severe and more frequent; in the fall, the suffering was most excruciating, and his case was considered past all human remedy by his parents and medical attendants. The poor fellow was, therefore, left to the tender mercies of this distressing disease, without any hopes of relief other than in death—which event seemed to draw nearer and nearer during the summer of 1857.

On the 10th of September, I was called to give my opinion in the case. The poor child's appearance, who is now eight years old, was pitiful to behold; his body reduced to skin and bone, with an expression in his face of long continued and intense suffering. He was constantly wetting his clothes with urine, and supporting his perineum and scrotum with his right hand. When I remarked this last phenomenon, I determined to make an instrumental examination of the bladder, although the skillful physicians who had, in their examination, found no stone in the bladder, almost satisfied me that there was really no calculus present. After the boy was entirely chloroformed, I introduced an ordinary steel sound into the bladder, and my index finger of the left hand into the rectum. By moving the point of the sound from the right to the left side, I passed over the fundus of the bladder in its whole extent, without being enabled to get the desired feeling of metal scratching over a hard body. In searching at the same time with the finger in the rectum, nothing but the natural tissues could be felt between the index and the sound. For the moment, therefore, I was satisfied that no stone was present. I proceeded in this way for some time, moving the point of the instrument sidewise as far as I was able; I then tried to push the finger

upwards as high as I could beneath the sound, and in doing so had the sensation as if I touched an unnaturally hard body lying between the pubes and my finger. Therefore, I continued searching with the catheter in another direction, moving its point forwards and backwards. This I did without any better result, till, at length, while I pressed the instrument as firmly as I could against the arcus pubis, and moved it at once in that way, I felt at times as if it struck against a hard body with a very small point of its circumference. But this sensation was so indistinctly and so rarely perceived, that I was obliged to ask for a second examination before giving a decided opinion. This was performed a few days later, together with Doctor Krakowizer, of New York. In examining, we followed the same method as before, with a more favorable result; for, in moving the instrument, as stated above, we had the sensation of the *end of the sound*, introduced into the bladder as far as possible, touching a stony substance, but only to such a limited extent that we both declared there was *a small stone to be felt near the posterior wall of the bladder.*

On September 19th, I performed the high operation upon this boy, assisted by Drs. Krakowizer and Voss, of New York, and Dr. Simrock of Ward's Island. The patient being chloroformed,* I divided the skin to the extent of about one inch and a half—the lower edge of the wound touching the symphysis pubis. After cutting through the muscular wall, as near as possible in the direction of the linea alba, I touched a layer of fat, about half an inch thick, which was the more unexpected as the boy was remarkably lean all over his body. This was separated by the handle of the scalpel, and moved upwards as high as possible. We now tried to elevate a portion of the fundus vesicæ, by the catheter, which, to our great astonishment and annoyance, could not be accomplished for a considerable time; till, at length, after repeated and persevering efforts, the end of the instrument passed forward with a sudden movement, as if it had freed an obstacle, and appeared in the wound, thus bringing in sight the anterior wall of the bladder. This was retained in its elevated position by a hook, and laid open to the extent of about one inch—the cut ending below, as near the symphysis pubis as possible. On doing this a small artery was opened, and a trifling hemorrhage ensued, which was promptly stopped by the application of ice. Into the cavity of the bladder I now introduced my finger, and found it filled out entirely by one enormous stone—enormous at least

* I injected the bladder with warm water, which was expelled immediately beneath the catheter, so that I had to operate upon an empty bladder.

compared to what we expected to find after our two examinations. The walls of the bladder were so closely applied to the surface of the stone that there was left no room for anything else, and consequently not one drop of urine was to be found in this organ. When I had introduced a pair of forceps and had grasped the stone, the hook holding the bladder gave way, and the latter sank down towards the os sacrum. The extraction of the stone was surrounded with more difficulties than we expected. Though the forceps held the stone fast in its gripe, so much so that a considerable portion of the external layers broke loose and fell away, I tried in vain for some time to bring it into view. This difficulty was partly owing to the diameter of the stone being larger than the opening in the bladder, and partly to the fact that the bladder opposed its removal by being spasmodically contracted around it. I therefore tried another forceps, which was easily introduced notwithstanding the unfavorable situation of the bladder in the depth of the wound. At length, when I had turned the stone upon its axis, I was able to extract it, but not without applying the whole strength of my right arm. The extraction of this stone resembled, in many respects, a difficult obstetrical forceps operation. After this, we had to remove a good number of stony particles which remained from the surface of the stone; and even after forcing a stream of water through the opening in the abdomen, by means of a catheter introduced into the bladder, there was still remaining a considerable quantity of sand both in the bladder and in the tissues surrounding the external wound. But in addition to this, there was a large round opening existing in the bladder, besides the one made by the operation, distinctly felt by the physicians present and myself. We were satisfied that it was a round opening with smooth edges, of the size of a Spanish quarter, and situated near the apex of the bladder. But while Dr. Krakowizer thought that the opening communicated directly with the abdominal cavity, because he had the impression that his index finger, passing through the hole, touched the small intestines, I felt distinctly that my finger went up from the opening directly into a fleshy tube, running upwards towards the umbilicus, thus leaving it for the present undecided whether there was a communication between the bladder and one of the intestines, or if the lower end of the *urachus* remained unclosed or in its fœtal condition. The favorable course that the operation took excluded as well Dr. K.'s as my first opinion, thus leaving only one explanation of the fact, viz.: that the urachus was either not obliterated after the child was born, or reopened and enlarged again in the first years of life, thus serving as an accessory bladder for recep-

tion of urine while the cavity of the bladder itself was filled by the stone. All the circumstances considered, the prognosis was more than doubtful, nay gloomy.

When the boy recovered from his narcosis, the pain felt in the wound was very intense, for which he was ordered to take ten drops of laudanum liquid. Sydenh. every half hour, until he began to feel easier. The only bandage I applied was a small piece of sponge, to be changed as often as it was drenched with urine. The reaction, after the operation, upon the patient's system was so trifling that his pulse never exceeded the number of 80 in a minute. Soon the water began to be discharged freely through the wound, carrying along daily a great quantity of sand and small pieces of stone. In a very short time, there appeared in the external opening that portion of fatty and cellular tissue, mentioned above, which I had to remove in the depth of the wound before reaching the bladder. It soon became of a lifeless, whitish color, and was separated by a gangrenous process from its neighborhood, so that I could remove it by and by with the scissors. Meanwhile, the boy grew stronger and more fleshy, and passed a portion of his urine through the penis, on the 12th day after the operation. By far the greatest section of the wound was now filled up with healthy granulations. Small particles of stone passed continually through the wound and the urethra. At about the 14th of October the external wound was almost entirely healed up, with the exception of a scarcely perceptible fistular opening, through which the water passed only when the boy tried to expel it forcibly. From time to time the water was prevented from running freely through the penis, in consequence of small fragments obstructing the passage on their way through the urethra. But when, towards the end of October, the passage of urine through the penis was continually attended with difficulties, though no more sand was found coming away with the water, I thought it proper to introduce an elastic catheter into the bladder, and let it remain there continually, in order to have a constant free flow of urine, thus giving a better chance for the closing up of the fistular opening above the pubis. The introduction and retaining of the instrument in its place was surrounded with many difficulties. Every time I changed them, the boy had to be chloroformed; the bladder would constantly expel them, and it was almost impossible to keep them in the right position for any considerable length of time. The surface of the instrument soon became roughened by the depositions from the urine, which was always impregnated with alkaline salts. In consequence of this, the urethra became so irritable that I had to remove them after a few days' trial, to avoid the dangers of urethritis and cystitis.

But while introducing these instruments, I had the sensation as if they were scratching over stony matter, just before entering the bladder. This, in connection with the fact that the obstacle which prevented the urine from running easily was only felt at the time when the patient made the first effort to discharge his water, while it flowed quite freely when once begun, led me to believe that the prostate was the seat of the difficulty. I therefore chloroformed the boy again, introduced a steel sound, and was now enabled to feel stony particles in the prostatic portion of the urethra. I passed the instrument several times over them in every direction, trying to loosen them from the surrounding tissue; and after withdrawing the instrument, the next urine that was passed contained several small stony particles, but of a very different shape from any that were discharged before. They were perfectly round, and not thicker than the head of a pin, thus exhibiting unmistakable specimens of prostatic calculi. What was to be done now? I was sure I could not have removed them all in this way, especially when I remarked that the difficulty in the passage of the urine was very little lessened after this operation. I therefore resorted to a chemical agent for dissolving the remaining portions. The solution, which will be fully described in the course of this article, was quite clear, and injected twice a day into the urethra by a small india-rubber syringe. The patient was ordered to evacuate his bladder a few minutes after the injection was made. The solution came out quite thick, for the first four or five days; but this soon changed, and when they had been used ten or twelve days, the fluid returned almost as clear as it was injected. At the same time, the boy began to pass his water more freely; and during another examination of the diseased parts, I was unable to feel the least stony matter with the instrument. Still the urine continued to show evident traces of continued catarrh of the bladder; and though the passage of the water became daily less difficult, it was not yet what it ought to be. I therefore ordered the following to be taken:

R. Balsam. Copaiv. ℥j.
S. in mucilag. gum. arabic. ℥v.
Adde natri bicarbon. ℥iss.
Syrup. cortic. aurant. ℥j.
M.D.S., 4 times a day, one tablespoonful to be taken.

At the same time, the balsam was injected once every day, with linseed tea, beginning with a few drops, and increasing the dose as it could be better borne.

Under this treatment, the urine became clearer; its passage almost entirely free; the capacity of the bladder entirely

restored; the wound apparently closed up entirely, still giving exit to a drop of urine occasionally. The boy was now able to keep his clothes dry even at night. He has grown fat and stout, and has but one complaint to make, and that is an unsatisfied appetite.

Description and Chemical Analysis of the Stone. (*See the lower fig. in adjoining plate.*)

The calculus, which was removed, measured two and a half inches in length, and four inches in circumference, and weighed a little less than two ounces. It was of an ovoid shape, and its rough surface of a dirty greyish brown color. When sawn asunder, it exhibited a lamellated appearance, consisting at once of three distinctly different concentric sections:

1. The outer layer, which was the thickest one, appeared to be of a pale yellowish color, was very friable, and exhibited in some places an aggregated mass of small, shining crystals. A particle of it heated before the blowpipe immediately turned black, emitting, at the same time, a disagreeable smell of ammonia; heat being applied more intensely, it began to fuse and diminish to about one-third of its original size, leaving a white, sparkling bead. Another portion of it was treated with dilute hydrochloric acid, in which it dissolved, almost entirely, with effervescence. The acid solution was almost neutralized with ammonia and treated with oxalate of ammonia, which threw down a white precipitate of oxalate of lime; when the ammonia was added to the acid solution of the calculus in excess, it caused a crystalline precipitate of the mixed phosphates of lime, and of ammonia and magnesia, as proved by the microscopical examination. These experiments show sufficiently that the outer crust consisted of the so called *fusible calculus* (which is a mixture of phosphate of lime and the double phosphate of ammonia and magnesia), together with some *animal matter* and *carbonate of lime.*

2. The second section of the stone forms the least considerable portion of it—is almost white in color, and its texture harder than that of the outer layer. Before the blowpipe, it charred very little, gradually became white, and could not be fused at all, leaving a residue the bulk and shape of which differed scarcely any from the portion originally taken for examination. Another particle, treated with dilute nitric acid, dissolved readily, with strong effervescence. One portion of the acid solution was neutralized with ammonia, when a gelatinous, amorphous precipitate was thrown down (phosphate of lime). To a second portion of the acid solution, a few drops of nitrate of silver were added, and the mixture cautiously

neutralized with dilute ammonia: a pale yellow precipitate was thrown down. These experiments proved that it consisted of a *mixture of carbonate* and *phosphate of lime.*

3. The inner segment or nucleus, of the size of a large almond, is of a clay color, inclining to brown, and arranged in thin, very distinctly marked, concentric layers. Before the blow-pipe, it decrepitated and parted in all directions, so that it was very difficult to retain a piece on the platina for further examination. When heated even to a slight degree, it blackened and exhibited a strong smell of burnt feathers, and disappeared gradually, leaving only insignificant traces of a whitish ash. Another portion of it placed in a warm solution of potash dissolved entirely, giving off at the same time ammoniacal fumes. When dilute hydrochloric acid was added to the hot solution, a precipitate was formed, which showed, under the microscope, small crystals of uric acid. Treated with nitric acid and afterwards with ammonia, it turned exquisitely purple, owing to the formation of murexide. Thus there was left no doubt that the nucleus consisted of *urate of ammonia.*

A very interesting feature in our case was the difficulty in finding this stone, notwithstanding its being uncommonly large and filling up the entire cavity of the bladder. The physicians who attended the patient previously, examined the bladder, and failed to detect the stone. This was done about two years ago. If we consider the enormous size, the weight, and the different layers of which the stone is formed—if we take into consideration the fact that, for about three or four years, the symptoms referable to the urinary system underwent no change in quality—we come to the conclusion that a stone, and one of considerable size, was present at the time when the first instrumental examinations of the bladder were made. Moreover, if a stone of this enormous size had really been formed in so short a time, no doubt the attending physician would have remarked a change in the local symptoms, and attempted another examination. The surgeons, I must repeat, were of the first reputation—still they failed in detecting the stone. This is not surprising. The same thing has happened to the greatest men in the profession, on this and on the European continent. Lapeyronie, Portal, Distel, stars of the first magnitude, died of stone in the bladder, and in none of them could the stone be detected with the sound during life. If we run over the history of cases where calculi in the bladder could not be found, we are always informed that they were exceedingly large ones, weighing from three to ten ounces, which escaped observation, even after the most scrutinizing search. Such was the case in this instance. The stone, two inches and a half in

diameter, filled up the bladder entirely—a condition which I could easily ascertain during the operation, confirmed by the fact that every drop of urine passed away through the urethra as soon as it had reached the bladder.

There must be a reason why a large stone is more difficult to discover than a small one. Before giving an explanation of this phenomenon, let us state a few facts in connection with the physiology of this organ. The outside pressure of the atmosphere, as well as the contractibility of the bladder, prevents the presence of air in its cavity. This I have ascertained in one or two cases by forcing a stream of air through a catheter, after injecting the bladder first with water; then I let the latter flow off, and when all of it was discharged, a sound was heard as if one was blowing into a narrow metallic trumpet. This being the case, the walls of the bladder must inevitably touch each other when it is empty, while there is vertical axis in the bladder when it is filled with one homogeneous substance, the laws of gravity only being represented if the bladder contains two substances of a different specific weight. These principles, applied to stone in the bladder, it is evident that if a good deal of water and a small stone are contained in this viscus, the latter must sink to the bottom. A very large stone is generally connected with more or less complete incontinence of urine, so much so, that even the water injected is driven off through or beneath the catheter. Therefore, large stones are generally the sole occupants of the reservoir.

From the above explanation of principles, applied to calculus in the bladder, it would appear that a large stone in the bladder presses no more upon the base of that organ than upon its fundus. Therefore, if we introduce a sound, and searching, as every one does, the base of the bladder, we touch nothing but the soft mucous membrane, the instrument, while moving to and fro, constantly removing from the stone a portion of the sac, wherever it happens to be placed, while the stone is kept unchanged in its position by those sections which are unattained by the sound. If the latter is driven in as far as possible, it removes the posterior walls of the bladder from the stone, which in this instance is kept in its position by the superior anterior and lateral walls. This state of things is represented in the accompanying plate, which has been prepared according to my suggestions, and added to this article in order to make my views more readily comprehended. It is intended to show the way in which a sound may be situated inside the bladder without touching a stone of the greatest circumference.

The catheter does not simply remove the bladder from the stone, but in doing so it must become closely surrounded

by a portion of the bladder, so as to lay between two membraneous folds, which by touching each other at their uppermost edges, form a perfect and soft channel in which the instrument moves up and down. This must be true, as the bladder is void of air, and the vacuum between the instrument and the stone has to be filled up with something.

In looking at the figure, it will be readily understood that there are only two portions which may possibly be brought in contact with the stone, viz.: the point of the instrument, and that portion of the catheter which lies nearest the orifice of the bladder. Whether the latter portion can be directed so as to touch the stone, depends entirely upon the inclination of the pelvis. In case of its being very much inclined, it is the lower edge of the arcus ossium pubis which prevents their contact entirely. The point of the instrument offers better chances of touching the stone. By elevating the entire instrument on a horizontal line, and moving it at the same time alternately forward and backward, it may be brought in connection with the stone. So it was in our case; we had the sensation as if a small stone was present, and encysted in some portion of the posterior wall of the bladder. But it often happens that the point of the sound, having entered the bladder, pushes forward a portion of the bag, which, readily contracting around it, thus creates a moving diverticle, in which the searching point is encysted. Even if it touches the stone, it is done through a coat of soft organic tissue, thus hiding from our judgment the real state of things. This simple explanation will be, no doubt, generally admitted as the true one, because it is based upon clear principles of physics applied to physiology, and strengthened by observation.

The high operation for stone was falling into disuse on this continent, when Professor W. Parker, of this city, revived it by three bold operations. For this act the profession owes him a debt of gratitude. The same service was rendered to France by Souberbielle, who published an article on "*Lithotomie suspubienne*," in the *Journal des Conn. Médic.*, December, 1842, which showed a great success, even in the worst description of cases. In Germany, it was Dr. Günther, of Leipsic, who directed the attention of practitioners to this almost abandoned operation, in a thesis on high operation, written in 1851.* In this effort he succeeded so well, that some of the greatest surgeons of Germany operated much and successfully after this method. I often had occasion to hear Professor B. Langen-

* G. B. GUNTHER, M.D.: *Hohe Steinschnitt seit s. Ursprunge bis zu s. jetzigen Ausbildung.* Leipzig, 1851.

beck, of Berlin, pronounce a very favorable opinion in regard to this operation. He prefers it to all other methods of lithotomy in operating upon women and children. Professor Pitha, of Prague, in his article, "*Diseases of the Genital Organs*," in Professor Virchow's *Handbuch d. Spez. Pathologie*, Erlangen, 1855, gives his decided opinion as to the superiority of this method for operating in women and children. If surgeons like those above mentioned begin to prefer the high operation for stone, to the lateral section, there is no doubt that the profession in general will follow their example. This has been done already to a great extent.

We receive daily accounts, by the medical journals, of the increasing popularity of this operation, and I am quite sure that in the next edition of Coulson's splendid work on Diseases of the Bladder, the following words (p. 491, 5th ed., 1857), "This method of operating is now nearly abandoned in this country (England), though it is still practised occasionally in France," will be changed into a different reading. The same author gives his opinion in plain words, that the high operation should be reserved for those cases in which the pelvis is so deformed that the proper incisions cannot well be made in the perineal state. If we were inclined to adopt this rule as a guide, the performance of the high operation would be necessary perhaps three or four times in a century. In this case it had better be given up altogether. With Coulson, most of the modern English and American authors consider lateral operation as *per se* superior, and after enumerating its advantages, pass over to the description of the exceptional cases where the high operation is justified. Thus, Professor Gross, in his work on Diseases of the Urinary Bladder, etc., opens the discussion on suprapubic operations in this way: "The proceeding, *although objectionable as a general rule*, may occasionally be resorted to," etc.

If we consider this operation from another point of view, we must come to very different results. By far the most direct, shortest and least dangerous way to reach a stone in the bladder, is doubtless that through the anterior wall of the bladder above the symphysis ossium pubis. The cutting into the bladder in the median line of the hypogastrium, through the linea alba, is connected with neither technical nor anatomical difficulties, and we run no risk of injuring important anatomical structures, except the peritoneum, which may be easily avoided if we operate carefully. This method enables the surgeon to make a sufficiently large opening into the bladder, suitable to any size of the stone, thus facilitating the searching for stone and its extraction more than in any other method. The

idea of urinary infiltration following this operation has haunted the surgeon like a nightmare. And really this danger is but imaginary if the subject is rightly considered. If in any case urinary infiltration was to be dreaded, it was in our own. There the bladder lay very deeply in the wound; above it was an enormous pouch, surrounded laterally by a great many layers of cellular tissue, so that we could but expect that the urine stagnating in this spacious cavity, would spread and give rise to urinary infiltration. But nothing of the kind happened, I believe, therefore, with most of the recent authors on high operations, Dr. Günther especially, that the danger of urinary infiltration has been overrated.

The danger of injuring the peritoneum ceases with a sufficient knowledge of the anatomy of the parts, and if also we exclude those exceptional cases from this method of operation, where the bladder is displaced so as to lay in the depth of the pelvis, near the excavation of the os sacrum. In these instances the bladder is situated behind the symphysis ossium pubis, and of course the peritoneum is dragged down to the symphysis. Such a state of things is met with in very old and lean people, and this is really the only contra-indication of the suprapubic operation. Most authors reject the high operation if the bladder cannot be filled and distended with water. In our case, not a drop of water was retained in the organ, still we had not the least difficulty in finding or opening it after it was elevated by the catheter. Finally, we encountered another obstacle to the successful performance of the operation, often noted by lithotomists, viz. a great accumulation of fat in the suprapubic region. This was also overcome without difficulty.

We conclude, therefore, that the high operation for stone, in a general point of view, may be executed just as easily and safely as the lateral or perineal section, while it presents some striking advantages over these methods in performing it upon children and women. The fundus of the bladder when filled with water is situated high above the symphysis pubis in women and young persons, and that portion of it which is uncovered by the peritoneum, presents itself easily to the operating instrument. In children especially, under eight years of age, the peritoneum, where it begins to cover the bladder, does not descend deeper than $1\frac{1}{2}''$ or $2''$ below the umbilicus, so that we may cut down safely through the abdominal wall under this space, without any risk of injuring the peritoneum or any important bloodvessel. But in executing the lateral section in children, great arteries, as well as the seminal ducts, seldom escape the touch of the scalpel, thus giving rise to dangerous hemorrhage and consequent impotency. This is

owing to the fact that the space between the arcus pubis, orificium ani and tuber ischii, is not only absolutely but also relatively smaller in children than in grown people. The same state of things prevents our removing a stone of any considerable circumference through a cut in those regions, and even the extraction of a small stone is generally accompanied by dilaceration of the tissues next to the wound in the lateral region.

The high operation for removing stone from the bladder of females, is of all methods the easiest to be exercised, and the safest, because the disastrous consequences connected with the other methods, such as incontentia urinæ, fistula vesico-vaginalis, etc., are avoided. And although the operation for the cure of fistula vesico-vaginalis has almost attained a state of perfection by the assiduous operations of our great surgeons here and abroad, this fact does not diminish the advantages of the high operation, when compared with the other methods, for it is better to relieve a patient by one than by two or three operations.*

One cause of death after the high operation which has been lately observed in a few instances by Dr. Günther and Prof. Pitha, viz. a complete and sudden suppression of the urinary secretion (anuria) cannot be imputed to the method, because it is an incident which occasionally follows the different operations which apply to the bladder, such as lateral operation, lithotrity, and even simple catheterism.

In regard to treatment after the operation of epicystotomy, I would recommend that no catheter or bandage be employed, but that the wound be covered with a clean sponge or pledget of lint to receive the urine, thus keeping the bed linen dry, and the patient comfortable. Other dressings than these are more apt to promote than to prevent urinary infiltration and irritation of the bladder.

In expressing these views of the high operation, I am sustained by nearly all of the great German surgeons, by some French surgeons of *premier qualité*, very few English, and one or two American surgeons of the first standing. I was encouraged by this support in the preparation of this article; for, though satisfied of the correctness of the views presented, my own experience is too limited to have the weight of authority.

* The method which Prof. G. C. E. Weber calls his own, and a new one (in an article on lithotomy in this Journal), is not excluded from this consideration, as it is only admissible with middle-sized and brittle stones. If the woman upon whom he operated had possessed a stone like the one that we extracted from this child's bladder, he would have been obliged to give up operating in his way, and choose another way for opening the bladder. But until the surgeon actually sees the stone, he is seldom enabled to judge of its size, and never of its density.

I hope that surgeons of large experience will improve their opportunities for testing the merits of the high operation, convinced that it will yet supplant all others.

Every surgeon who is called upon to treat a patient for stone in the bladder, will prefer the operation with the knife or the lithotrite to the tedious application of internal remedies for dissolving the stone. This will be generally admitted. On the other hand, every physician who has treated cases of concretions in the bladder, must have felt a desire of having a preparation, which might enable him to dissolve stone. There are patients who will rather bear their sufferings than be approached with an instrument, or if once operated upon, decline any further surgical interference. Again, we often meet with such a high state of irritability of the bladder, that it would be unsafe to increase it by a protracted employment of steel instruments. In other cases the calculus is small, so that we do not feel justfied to subject the patient to all the hazards of a regular lithotomy for relieving him from the trifling uneasiness connected with his disease, especially if the condition of the urethra or the location of the stone is such that we must abstain from lithotrity. This is not all. We meet with hundreds of unforeseen circumstances, which make it desirable to have a solvent for stone.

Various attempts have been made to dissolve stone in the bladder, sometimes by introducing remedies into the system by the digestive organs, sometimes by direct application to the calculus. It is the latter ones that we intend to subject to a short analysis, to see if any one of them is worthy of attention. Until within the last few years, the therapeutical treatment of stone has been the almost exclusive privilege of irregular practitioners. This is one reason that it is but recently that some really scientific men have taken the matter in their own hands. The remedies used by the latter may be divided into two classes, viz. 1, simple solvents; 2, chemical agents, working on the principle of double decomposition. Among the former are to be counted, (*a*) acids (for phosphatic stones), such as muriatic acid, nitric acid (Brodie), gastric juice (Dorsey, Millot); (*b*) alkalies (for lithic calculi), lime water (Berzelius, Amussat, Leroy), borax (Ure, Gay Lussac), Vichy water (Petit, Chevallier), Baréges water (Desault). It would surpass the limits proposed for this article, if we were to discuss the value of these remedies. I shall, therefore, confine my remarks to those of the second class, viz. agents acting upon the stone by double decomposition.

The chemicals proposed for this purpose are preparations of lead, and among these the nitro-saccharate of lead has been

applied in practice. Some of our greatest surgeons, and among them Prof. Gross of Philadelphia, when speaking of lead preparations as solvents for stone, show clearly that they have not the least confidence in their application. But the observations of Dr. Hoskins of Guernsey, England, made such a favorable impression upon my mind that I was induced to make some further inquiries regarding the solubility of stone by the method of double decomposition.

Instead of nitrate of lead I employed the acetate (plumbum aceticum) thinking that the presence of an organic acid would have a greater affinity for a chemical compound formed in a living organism. Before using it as an injection, I instituted the following experiments. In one ounce of water I dissolved 10 grains of acetate of lead, and superacidulated it with 10 drops of strong acetic acid. This clear solution I poured over ten grains of stony particles taken from the outer layer of the calculus. As soon as they came in contact with the water thus saturated, it seemed as if whitish vapors began to settle around each of them, emitting at once, small air-bubbles. These clouds grew thicker and thicker until at last the particles were entirely enveloped. I now began to agitate the fluid by moving the bottle slowly up and down for about half an hour, the consequence of which was, that the formerly clear solution turned quite thick, thus proving that a chemical process was going on. The mixture, when examined the next day, presented the following appearance. The fluid portion was almost clear, while the bottom of the vial was covered with a thick, coherent precipitate, which consisted of three portions; (*a*) some few of the stony particles left coherent, but all greatly diminished in size; (*b*) a greyish, powdery concretion, being seemingly, a mixture of disintegrated particles of the stone, and precipitated portions of the lead; (*c*) a layer of a perfectly white substance shaped in a coherent thin foil. After filtering the liquid from the solid portion, I separated the three different specimens of residue as much as possible. I was able to collect six of the fifteen small pieces of stone which I had subjected to the test. While in bulk, they formed about the third part of the original stock, they had lost so much of their weight, that they weighed not more than *one grain*, and were so much changed in their constitution that the slightest touch with the finger was sufficient to crush them into powder. Another portion of the calculus was reduced to a very thin dust.

The white layer (*c*) I collected on charcoal, and exposed it to the blowpipe, when to my great surprise, it melted away to a greenish white bead, which after cooling, crystallized so evi-

dently that not a shade of doubt could be left about its nature—it was *phosphate of lead.*

The liquid portion filtered from the solid mass exhibited a strong acid reaction to test paper. A stream of hydrosulphuric acid, being transmitted through the fluid effected not the least change in it; thus proving that the 10 grains of acetate of lead taken for the experiment, had been entirely reduced. A further chemical examination showed that the liquid contained a great quantity of lime, and some ammonia, in solution, the acids combined with them, being phosphoric and acetic acid, the latter in excess.

The conclusions drawn from this experiment may be expressed as follows: A superacidulated solution of acetate of lead acts upon phosphatic stones as a decomposing, desintegrating, and solvent agent; the phosphoric acid previously combined with lime or ammonia, uniting with the lead, the acetic acid of which goes over to a portion of the lime or ammonia, in exchange for phosphoric or carbonic acid, while the free acetic acid in the water renders a portion of the undecomposed phosphate of lime soluble.

Further, it became evident that 10 grains of the lead are not sufficient to decompose 10 grains of a phosphatic stone. But this has no value in practice. The particles of stone which were left unchanged in size and shape had undergone such changes that agitation in water sufficed to turn them into powder.

This one experiment speaks clearly enough, and not the least shade of doubt can be left that acetate of lead is a remedy by which we are enabled to destroy and dissolve phosphatic stones. I therefore resorted to it with confidence in its efficacy, and I was not deceived. The remaining particles of stone in the bladder and prostate were dissolved. In short it acted admirably in the manner stated above. Its employment was attended with no difficulty at all; it produced neither pain nor irritation in the urethra or bladder, and the happy result of our operation is due, to a certain extent, to these lead injections.

The formula I used was as follows:

℞ Plumbi acetic. grs. vi.
S. in aqua. fontan. ʒvi.
Adde acidi acetic. fort. q. s.
ad solution. perfect.
D. S. One small syringeful to be injected twice a day.

101 West 26th street.

ART. II.—*Cases of Paracentesis Thoracis.* By JOHN T. METCALFE, M. D., Professor of Practice of Medicine, University Medical College, and Physician to Bellevue Hospital, New York.

Case 1.*—William Kirch, aged 24, German, by occupation a currier, entered the New York Hospital, February 15th, 1855. Free from any hereditary tendency to disease.

Three weeks before admission, had been taken with pain in the left side, and cough, followed by febrile symptoms and dyspnœa. The pain was of a sharp, lancinating character, increased by a full inspiration. The cough, dry at first, was accompanied, shortly after, by an abundant expectoration of viscid aerated mucus. There had never been hæmoptysis, nor previous chest trouble.

On being visited after entering the service, he was found to be considerably emaciated; his cheeks were sunken, skin pale, warm and perspiring; countenance anxious. The pulse, small and weak, 116; respiration extremely labored, 36; decubitus, indifferently on the right or left side; tongue moist and covered with dark fur; anorexia.

The left chest, perceptibly larger than the right, presented a smooth surface, with effacement of the intercostal spaces; little or no expansion of this side, on forced inspiration; considerable fullness of the left hypochondrium; heart's apex beating to the right of the sternum, near the nipple. Percussion dull over whole of the left side. No respiratory murmur over affected portion. Posteriorly, distant, harsh, bronchial respiration, with broncophony, was audible at upper part of left interscapular region. The right half of the thorax presented the usual phenomena of supplementary respiration—no evidence of pulmonary disease being present.

Recognizing the existence of effusion into the left pleural sac—the patient was kept upon the usual course of diuretic and counter-irritant remedies, without beneficial results, until the 19th, four days after admission. His condition had only been changed for the worse. The pulse ran up to 133, the dyspnœa had augmented; the cough much more troublesome during the night; expectoration bronchitic, muco-purulent, and more abundant than at last note. Physical examination revealed no material change in the condition of the chest. The respiration was only audible, as bronchial, at the upper part of the lung; the heart sounds were transmitted very clearly over the whole left side.

As it seemed certain that medicinal treatment promised

* Reported by Dr. H. B. Mills.

nothing encouraging, I determined to ascertain what benefit might follow removal of the fluid by operation. On introducing the small exploring needle, pus flowed from the groove. The trocar of Wyman's instrument was then passed into the chest, in the eighth intercostal space, under the angle of the scapula, and sixty-four ounces of pus were withdrawn by the exhausting syringe. During the operation, the patient lay on his back, near the edge of the bed, and had a roller bandage, one end of which was held by an assistant, passed around his thorax.

After the amount of pus mentioned had been removed, there was complaint of cough, and a disagreeable feeling of oppression under the sternum. Nothing like syncope was observed. The patient was comfortably bandaged and resumed his ordinary decubitus. In a few minutes he expressed very great relief from the dyspnœa, and said he felt "almost as well as ever." The pulse fell to 120, and the respiration was diminished in frequency. In this operation, no air entered the chest during or after its performance. The aperture was closed by a piece of adhesive plaster, and an anodyne given.

Examination of the chest showed that there was resonant percussion over more than half of the diseased side, at the summit; that there was loud bronchial respiration, broncophony and coarse sub-crepitant rhoncus over the resonant part, and that the heart had returned two inches nearer to its normal position.

On my visit next day, I learned that Kirch had been very comfortable, during the evening, and had gone to rest at the ordinary hour. Towards one o'clock on the following morning, the nurse went to look at him and found him laboring under great dyspnœa, from which he almost immediately afterwards died.

An examination of the body was made thirty-two hours after death. Weather cool. *Head*, not examined. *Thorax.*—On opening the cavity, no escape of air from pleura. The right lung was free from adhesion to chest wall. It was more intensely œdematous than I had ever before seen pulmonary tissue; non-crepitating on pressure; scattered patches of lobular collapse, especially in lower lobe; healthy in structure, except a small tubercular deposit at posterior summit. The left lung covered by old false membranes, completely carnified, containing a few miliary granulations at its apex, extended from the upper part of the pleural sack to the diaphragm, forming a sort of roll, in close apposition with the vertebral column. For an inch from its free surface, the bronchiæ had become white cords, from the great compression, no trace of a tube

being recognizable. Careful search made it certain that no perforation of the pulmonary pleura had occurred. In the left sac, about thirty or forty ounces of pus, in which abundant flakes of false membrane floated. The exudations on the costal pleura, tinged red by hæmorrhagic extravasations—the latter not most marked in the vicinity of the puncture made by the trocar. The bronchial glands large and filled with black pigment matter. Larynx and trachea healthy.

There was nothing abnormal in the state of the heart except a slight degree of thickening of the free edges of the mitral valve.

Abdomen.—Organs healthy, except the liver, which had become somewhat cirrhosed; weight, five pounds.

From the extremely œdematous state of the lungs, I feared that too much fluid had been removed at once, and that a sort of vacuum had been formed, which allowed pulmonary congestion to such a degree as to bring about the dropsical condition noted. This explanation was with difficulty received, on reflection, as the time that elapsed between the tapping and the evening visit, seven or eight hours, would have almost certainly enabled the house physician to perceive the approach of such serious trouble, had it been coming on. I made strict inquiry to assure myself that no undue amount of anodyne had been administered, and was perfectly certain that only a small dose had been given.

I regretted my inability to examine the brain; but this was not allowed by those to whose permission we were indebted for the autopsy already recorded. The mode of death was new to me, not having met with anything like it, in cases operated on before or since the one of Kirch.

Case 2.*—James Britt, æt. 34, a native of Ireland, by occupation a tailor; admitted to Bellevue Hospital, May 17th, 1855. Several circumstances in the history of the patient's family, and its collateral branches, pointed to the existence of an hereditary predisposition to phthisis. His mother and her brother died of "pleurisy," as the patient says, after protracted illness: he is himself the only surviving member of his family, his two sisters having died under the age of 14, with symptoms strongly indicative of tubercular disease.

The patient had in his youth two severe attacks of fever, and also the intermittent fever; but his general health remained good, until the age of 18, when he became intemperate and irregular. He has had syphilis in its primary form, with buboes, and seems to have suffered from some secondary symp-

* Reported by Dr. Wm. H. Draper, House Physician.

toms and tertiary rheumatism. He has been salivated once. His habits and occupation exposed him to frequent colds: these have never been protracted, and he has never suffered from hæmoptysis.

His present illness he dates from the 1st of May, and ascribes to a cold taken during exposure: he was seized with darting pains in the left side, anteriorily, accompanied with difficulty of inspiration and a dry cough. On admission, physical examination detected effusion in the left pleural cavity, rising to the middle of the scapula, and displacing the heart to the right side. The patient's general condition was feeble and anæmic: he was harassed by a dry barking cough, and had no appetite.

The treatment consisted in the use of the Pil. Triplex,* with Tr. Ferri Muriat. and bitter tonics internally, and a succession of blisters over the affected side. This course was pursued for three weeks, without any marked improvement in the patient's general condition, or any perceptible diminution of the effusion. On the contrary, his health seemed to be failing. He suffered considerably from dyspnœa, from irregular shooting pains in the left chest, with anorexia and marked hectic. No physical signs of phthisis could be detected.

Under these circumstances, it was determined to submit him to the operation of paracentesis thoracis. On the 12th of June, the day the operation was performed, his condition was as follows: Pulse, 96; respiration, 32; skin hot and moist. Physical examination revealed the same conditions before noted. On measurement, the dimensions of the two sides of the chest were found to be the following:

Around the nipple, R. S., 18¼ inches.
" " L. S., 18½ inches.
" lower extremity of sternum, R. S., 18 inches.
" " " " L. S., 17¼ inches.

An opening was made into the cavity under the axilla, in the seventh intercostal space, the patient lying on his back. Ninety-six ounces of pale, straw-colored, perfectly limpid, transparent serum, flowed freely through the canula. The patient expressed a sense of immediate relief. He was placed on the use of "Ammon. Sesqui-Carb. grs. v. ter die," as a diuretic, with bitter tonics and good diet.

June 13.—Patient feels more comfortable, and can lie on his right side; skin moist; no increase in diuresis.

June 19th.—Condition not improved; pulse, 80; respiration, 24; skin hot and dry. Physical examination indicated a reac-

* Calomel, squills and digitalis.

cumulation of fluid. Pulsation of the heart still felt to the right of sternum, the patient lying on his back. Percussion resonant, to anterior edge of axilla, where it becomes flat. Dullness extends up the region of scapula, posteriorly. Puerile respiration on right side; bronchial respiration and broncophony on the left.

Operation of paracentesis repeated. Puncture made near to the first. Fluid would not run through the canula; about six ounces were obtained with difficulty by suction. The fluid was of the same density and color as that first drawn. Ordered, "Spts. Æth. Nitric. ʒj, ter in die."

June 20th.—Patient has been chilly occasionally during the day; cough not troublesome; decubitus chiefly dorsal; can lie on either side, more comfortably on the right; no excitement of cough by pressure on diaphragm. Pulse, 80; respiration, 24; skin hot and dry.

June 21st.—Patient passed an uncomfortable night, perspiring freely; urine scanty, not albuminous.

June 25th.—Paroxysms of hectic continued to recur; very slight increase in diuresis. A physical examination, made in the morning, indicated the existence of the effusion at the same point; there was complete dullness and faint ægophony at the surface of fluid. About 11 A. M., he was removed to an upper ward, and, in the afternoon, signs of pneumothorax were detected; the time at which the perforation occurred was not marked by acute symptoms.

Ordered, Quiniæ Sulphat. grs. v., Morphiæ Sulphat. grs. ¼ at night.

June 28th.—Patient felt more comfortably, but was evidently losing ground. Physical signs indicated circumscribed pneumothorax posteriorly. Metallic tinkling.

From this date the patient began to fail rapidly, refusing to rally under the most stimulating and nutritive diet. He died July 17th.

Autopsy, 8 hrs. P. M.—Rigor mortis well developed; body pale and much emaciated; no signs of decomposition, though the weather was intensely warm.

Thorax.—On raising the sternum, slight adhesions were found, posteriorly, to right lung, by recently effused false membrane. Left lung adherent, anteriorly, to the portion of sternum which covered it; left border of the heart in the median line. Ninety-six ounces of greenish serum distended the left pleural sac, the upper stratum of which was transparent, whilst the lower was turbid and purulent. On inserting a tube into the trachea, and thus inflating the lungs, no air escaped from the left lung, while the right became easily inflated; the left

lung was very much compressed, being of not more than one-fourth the natural size.

Against the anterior mediastinum, occupying the upper portion of the pleural cavity, and extending to the diaphragm by a thin prolongation, the whole of the left pleura was covered by a thick false membrane. Right lung crepitant, normal in size and appearance, structure healthy; upper part of left lung hard and carnified, containing numerous small, yellow, tubercular deposits; the remainder of lung slightly crepitant, and free from tubercular deposits.

Heart normal.

The difficulty in obtaining fluid by the second operation, arose from the occlusion of the canula, by false membrane, as there must have been a large quantity of serum at the time of the puncture. The evident failure of vitality, without great increase of dyspnœa, made me think a further resort to paracentesis unnecessary. I could not ascertain, notwithstanding most diligent search, where the perforation of the lung had occurred. That this had happened, I could not doubt, so clear were the signs of pneumothorax for several days before death. It was not possible to have penetrated the lung with the trocar, so great was the distance at the point pierced, between the costal and pulmonary pleura. In this case there was evidently no benefit from the tapping. It is recorded that a fair judgment may be rendered as to its expediency in the disease.

Case 3.—W. F., æt. 19, a young gentleman of previously good health, and without an inherited predisposition to disease of the lungs, came under my observation, in consultation with Dr. B. W. Budd, of this city, in May, 1855.

For two or three months previously, he had been suffering with symptoms of severe bronchitis, preceded by dry cough, pain in the side, and dyspnœa. At the time of my visit there was great constitutional disturbance: pulse, 120—130; respiration, 30—40; copious, drenching night sweats; harassing cough, with abundant expectoration of thick muco-purulent matter. Pain in the left side had been a prominent symptom, and continued to be complained of, with inability to lie on this side of the body. There were well marked evening exacerbations of fever coming on every day.

Examination showed great emaciation of body; mind exceedingly irritable; obvious increased size of left thorax; left shoulder higher than right, except in forced respiration, when the reverse obtained; displacement of heart to right side of sternum; absolute dullness on percussion over whole of left side, with absence of vesicular murmur; bronchial respiration and ægophony at root of left lung; normal percussion and

auscultation of right chest, except dullness, extending an inch to right of sternum, and puerile respiration.

June 22d.—The patient had been already judiciously treated by Dr. Budd, with the object of removing the fluid effused into the pleural sac. No absorption had occurred. On the contrary, the signs showed an increase in its amount, with the great constitutional disturbance above noted. Deeming a continuance of counter-irritants, absorbents, diuretics, and alteratives, of no probable benefit, an exploratory puncture was made by means of Charrière's fine trocar. On withdrawing the steel, no fluid escaped. Feeling confident that there was fluid effusion, I exhausted the air from the silver tube, when several drops of pus flowed from its extremity. I then introduced the large trocar of Schuh, and to my surprise, found it was again "dry tapping." I made sure that the canula was in the pleural cavity, by passing a probe through it to the depth of four inches. Adapting a flexible catheter to the outer end of the canula, and exhausting the air, sixty-four ounces of very thick, whitish, inodorous pus were evacuated. The fluid was nearly as thick as clotted cream, and flowed through the catheter with considerable difficulty.

The patient was so debilitated and nervous, that it was found impossible to perform the operation in the sitting posture. He was, therefore, laid on a cot, the body being drawn close to the edge of it. After the withdrawal of the above amount of pus, a small leaden wire bent on itself in the shape of the letter T, was introduced into the orifice made by the trocar—the arms, two inches in length, being kept in contact with the thorax by strips of adhesive plaster. He expressed himself much relieved after the completion of the operation.

In one hour, his pulse had fallen to 120; the respiration to 28 in the minute. The severe pleuritic pains of which he had previously complained so much, ceased to be felt. As he had been, for several weeks, in the habit of taking morphine as an anodyne and hypnotic, he was directed to have fifteen drops of Magendie's solution of the sulphate (grs. xvj. to f℥j.) in the afternoon.

June 2.—Has passed an excellent night. Very little cough; much less perspiration; no complaint of pain; bowels regular. Discharge from wound, during the night, has amounted to five or six ounces.

June 18.—The history of the case from the last date may be told by saying that the general condition has steadily improved. There has been no cough worth mentioning; the appetite continues good, and the alvine evacuations regular. Under the use of quinine and elixir of vitriol, the sweats have almost

entirely disappeared. The solution of morphine which he has taken at bed-time to prevent nervousness and restlessness, has been gradually reduced to five drops. Pulse 100; respiration 20. Is anxious to go to the country.

In the month of August he left New York by the Erie Railroad, and went as far as Narrowsburgh by the cars, making twelve miles of staging in order to reach Honesdale. Here, he found himself very much exhausted by the fatigues of travelling, and had a recurrence of all his old troubles, such as hectic fever, cough, loss of appetite and great debility. He complained much of the wire, which was removed by Doctor Marsh, under whose judicious care he had been placed.

The opening made by me soon healed, and the symptoms were not of a promising nature, the case being regarded both by Doctor M. and myself as one of empyema complicated with tubercular affection of the lungs. In about two months, an abscess appeared under the left nipple, which discharged spontaneously, to the great relief of the pulmonary symptoms, and with marked relief to the general health. The amendment continued until the spring of 1856, when I saw him in New York, scarcely deserving the name of an invalid, the flow of pus having, for some time past, entirely ceased. Doctor Marsh's treatment had been of a tonic and supporting nature, avoiding as much as possible the use of drugs. In a troublesome chronic diarrhœa with which he had been taken whilst at Honesdale, he was relieved by ten drops, three times a day, of the solution of persesquinitrate of iron.

December 7th, 1857.—I have, lately, heard of Mr. F., and he is stated to have been for nearly a year in excellent health. His chest is somewhat flattened on the left upper part, but he makes no complaint whatever of illness.

Case 4.—Oates, aged 25; bricklayer; came to the College Clinic in April, 1856, complaining of cough, pain in the left side, and difficulty of breathing.

Of good hereditary history, but of intemperate habits, he had been healthy, until about twelve months before coming under observation, when he took cold from exposure to the weather, and was seized with cough, pain in the side, and dyspnœa. For a fortnight there was no expectoration. After that, it was noticed—colorless ærated sputa, at first, which subsequently changed to rather copious muco-purulent matter. Subsequently, lost flesh and strength—had night sweats—occasionally raised small quantities of pure blood by coughing; appetite variable; habitually oppressed and distended about stomach, after eating; pulse 120: respiration 36.

On physical examination, there were found dullness on per-

cussion of left chest, displacement of heart to right mammary region; absence of normal respiration on affected side, its place being taken by that of a bronchial character; voice ægophonic, especially in interscapular region; puerile breathing and natural percussion over right half of thorax, except the dullness caused by the displaced heart.

April 23.—The patient's condition the same as at last note, except that the legs and abdomen were very dropsical. No albumen in the urine, which was scanty. As the usual alterative, diuretic and counter-irritant treatment had been vainly employed, the operation was performed with Wyman's pump, and forty-four ounces of thick yellow inoffensive pus were withdrawn. The tapping was not at all complained of by the patient, who sat up in a chair during its performance. The puncture was made in the seventh intercostal space, below and to the left of the nipple. Towards the close of the flow of pus, there was cough and a sense of discomfort, which caused me to discontinue the removal of fluid, long before the pleura had been emptied. Puncture closed by plaster. To take iodide of potassium, and to have support.

May 14th.—For a week or ten days after the tapping, there was great relief to the urgent symptoms under which he labored, when first seen. Subsequently, however, they returned, and thoracentesis was again performed. The benefit was not obvious on this occasion. His troublesome symptoms became more marked, the dropsy recurred to a great extent in the lower extremities; asthma increased, and on the twenty-fifth of the month, he died. No post mortem examination could be procured.

NOTE.—The man's hereditary history was taken from the statement he made at the Clinic. I have since learned from Doctor James O'Rorke, that Oates had lost a brother and two sisters of undoubted pulmonary tuberculosis.

Case 5.—Philip Lynch, æt. 19, footman, of previous good health, and without hereditary predisposition to disease, was taken with symptoms of acute pleurisy of the left side about the end of August, 1856.

He ascribed his illness to a prolonged sea bath, taken whilst overheated by previous brisk exercise.

The patient first came under my notice towards the beginning of October, of the same year, when I found that he had been under treatment, about six weeks, for kidney trouble and inflammation of the lungs. So far as I could gather from questioning him, the attack had been one of ordinary pleurisy with effusion.

He had already been treated with mercurials, blistering, purgatives and diuretics by the gentleman who had prescribed for him, but without benefit. The following was noted as the result of physical examination on the 11th of October.

On inspection, evident increase of size of left chest, with abnormal fullness of the hypochondriac region of the same side. Pressure under the left margin of ribs increased the dyspnœa, already habitually great. The heart's apex was immediately under the right nipple. No expansion of chest in intercostal spaces of affected side, on forced inspiration. Percussion very dull over whole of left thorax, extending one inch to right of the median line. Respiratory murmur absent from left chest. Bronchial respiration and broncophony, on cough or deep breathing, in left interscapular region.

The right side presented nothing but the phenomena of puerile respiration, with a little subcrepitant rhoncus at the upper part. No alteration of percussion note, no vocal signs of disease.

His general health at this time had become much impaired. He had lost flesh and strength; his appetite had failed, his bowels were torpid; kidneys inactive; had a habitually quick pulse, with hectic fever and perspiration at night; cough, with muco-purulent expectoration, moderately abundant; considerable œdema of lower extremities and of affected side of chest; inability to lie on right side.

Having, for several days, tried to influence the amount of effusion and the troublesome symptoms dependent on it, by the pill of squill, digitalis and calomel—by the use of counter-irritants and by diuretics; and finding that no amendment, but rather an increase of disease was the result, I decided to remove the fluid mechanically. Accordingly, the small exploring trocar having been introduced in the seventh intercostal space, under the angle of the scapula, whilst the patient lay in bed, a flow of pus followed the removal of the instrument. In the usual manner, Doctor Wyman's exhausting pump was adapted to the canula, and *seventy-eight ounces* of dirty looking pus, having the color of pea-soup, but without fœtor, were withdrawn. No complaint was made, during the flow of pus, nor was there any discomfort to the patient, beyond the trifling pain caused by incising the skin preparatory to introducing the trocar. It was not found necessary to tighten the roller bandage, which had been placed round his chest, until the instrument had been finally withdrawn, and the adhesive plaster placed over the puncture. After the operation, the breathing became easier and less frequent; the pulse was unchanged, 120. The heart came so much to the left, as to

beat under the sternum. There was resonance on percussion, as far down as the sixth rib, with bronchial respiration and broncophony. No trouble in lying on right side.

To take three times a day, five grains of iodide of potassium, and to have milk, hominy and soup for diet.

For several weeks, there was an amendment in all the symptoms in Lynch's case; but about the middle of December, from reaccumulation of fluid, it became necessary to remove it once more. This was done with an ordinary trocar and canula, the opening being made under the axilla, in the eighth intercostal space. About *eighty ounces* of the kind of pus already described were removed, and free admission of air to the chest allowed. To keep the orifice open, a piece of small lead wire bent in the form of T was introduced into the opening with strips of adhesive plaster placed over the arms, in order to keep it in its place. It was thought that this would ensure the free flow of pus, without producing an inconvenient amount of irritation. He was ordered a generous diet, cod liver oil and porter, and to continue his iodide of potassium.

There was the same relief afforded by this operation as had been experienced from the former. The pus continued to flow abundantly, but soon became so fœtid as to require the use of Labarraque's Solution, frequently applied, to render the air of the small room in which he lay, supportable to his attendants. He complained also, of the soreness produced by the lead, after several weeks, and finally removed it. In the course of about a month I found signs of reaccumulation of fluid (the orifice having healed), and thought I would pass a lead wire through an intercostal space, by means of a trocar, similar to those used in puncturing the bladder, per rectum, which instrument, by taking a long stitch between, and in the direction of the ribs, would enable me to have a loop of the wire as a kind of drain for the flow of pus. The operation was easy enough in performance, but in the course of a week so much inflammation of the subcutaneous cellular tissue resulted in its neighborhood that I was forced to withdraw the wire. Pus continned to be discharged from the opening thus made, and did not cease to flow until the final cessation of the discharge in September, of the present year, when there was no appearance of disease beyond the collapse of the side—a certain loss of resonance on percussion, and weak vesicular murmur. Cough and dyspnœa had entirely disappeared, the appetite had returned; the pulse was natural in frequency, and the patient was anxious to return to service. At one of my clinical lectures during the month of September he was able to walk without difficulty

from his home in Hammersly street, to the University Medical College, and back again.

I have omitted many details in the history of this patient. At times he was so debilitated and suffered so greatly from hectic, and anasarca of the inferior extremities, that several gentlemen who saw him for me, unhesitatingly told me that he could not live more than a few days. I must confess, that on several occasions I expected him to die before my next visit. He passed nearly the whole of last winter in a small uncomfortable garret, heated by a red hot stove, and in a room which served as kitchen, laundry, parlor and dormitory for his father's family. During much of his illness, he expectorated very copiously, thick, muco-purulent matter, especially when the external flow was checked. I thought several times, that there must be pleural fistula, but careful examination always failed to reveal any physical signs of such a lesion.

This copious expectoration I have observed in other patients similarly circumstanced. I have never found it to continue after the withdrawal of the contents of the pleura, and have never been able to make out perforation of the serous investment of the lung. These cases have recalled to my mind an observation made to me by Doctor Stokes, to the effect that in empyema, he had seen instances in which a metastatic secretion from the mucous membrane of the bronchi seemed to take place.

Case 6.—James Clive, aged 23, saddler, born of healthy parents, was admitted to Bellevue Hospital, August 31st, 1857. Has lost two brothers and a sister with pulmonary consumption. Has been a moderate drinker.

Was healthy and strong until 1848, when, being on his way to New York, from Ireland, had an attack of typhus fever. From this he recovered and was not again ill until the winter of 1855–56, when he was taken with acute articular rheumatism, lasting fourteen weeks. One week after the affection of the joints was observed, was seized with some pain in præcordial region, and difficult breathing, amounting to orthopnœa. From the rheumatic and other troubles, he states that he entirely recovered, with the exception that he has never been free from palpitation and dyspnœa, on unusual muscular exercise.

About the beginning of May last, he took a cold and cough, and suffered from pleuritic stitches in the right side. The cough had been dry and unattended by any sense of relief. A month later, he found himself suffering much from dyspnœa, and could lie with comfort only on the right side. Within the last twelve days he has grown very much worse. Debility has increased; respiration is almost impossible, except in the erect

posture; sleeps uneasily, and but little; has had very profuse night sweats; anorexia almost complete; urine small in amount, and densely charged with urates and phosphates.

Physical Examination.—Pulse and respiration much accelerated; face anxious and covered with perspiration; eyes prominent and staring; right chest enlarged one inch more in circumference than left; heart's apex but three inches to left of nipple of same side; whole right side dull on percussion; the dullness extending two inches to left of median line. Bronchial respiration and broncophony at upper half of right chest; strong puerile breathing over left lung; harsh murmur, systolic over heart, most marked at apex, but heard *over the whole thorax;* pulse small and weak.

To calm the nervous restlessness under which he labored, and to procure sleep, a mixture of tincture of hyoscyamus and sulphate of morphia was ordered by the house physician. This seemed by the next day, to have afforded him some relief, when he was put upon diuretic doses of the iodide of potassium, with fifteen drops, three times a day, of syrup of iodide of iron.

Sept. 9th.—Finding that the dyspnœa and sleeplessness, with the night sweats and debility had increased, notwithstanding an increased flow of urine, now slightly albuminous, I concluded to perform the operation for removing the fluid in the chest. There was a constant sensation of choking whenever the patient attempted to lie down to sleep. The pulse was 120, very weak and small; the respiration 48.

In the usual way, by means of Wyman's apparatus, *eighty ounces* of clear serum were withdrawn—the patient lying on the back in bed, supported by pillows placed under the shoulders. During the flow, he complained somewhat of weakness, of which he was readily relieved by drinking brandy and water. When the amount mentioned had been slowly pumped out of the pleural sac, there was a disposition to cough, and complaint was made of a sense of oppression in the chest. The roller bandage was snugly tightened round his thorax, the puncture covered by adhesive plaster, and one quarter of a grain of sulphate of morphine administered. During the operation the patient became much relieved, and at its conclusion was enabled to take a long breath, without trouble or discomfort.

September 15th.—Since last date Clive has rested quietly and slept perfectly well. As a diuretic, he has used, three times a day, five grains of carbonate of ammonia. This has acted very well; but on examination, to-day, there was found to be so much fluid reaccumulating as to induce me to repeat the tap-

ping. This was done as before, in the seventh intercostal space, under the anterior wall of the axilla, and *eighty ounces* of the same kind of transparent albuminous serum as before, were removed. Before the operation, the pleura was filled up to the level of the nipple, although the heart was much less displaced than on the former occasion. Great relief followed the paracentesis.

September 22d.—Patient has slept well, but grows weaker. The heart sounds as mentioned in first note; under the diuretic treatment, the fluid was so much diminished as to require no repetition of the pump. Normal respiration and percussion note to within four fingers' breadth of the base of the lung, posteriorly.

Sept. 30.—Patient died by asthenia, the respiration remaining easy; but the tumultuous action of the heart continuing to the last. Unfortunately, the prejudices of his relations prevented a post mortem examination from being made.

In this case, which was shown in the course of my clinical lectures, every one was struck with the extraordinary evidence of distress furnished by the patient's face and manner, no less than by the almost immediate relief and comfort that attended the removal of the serum. Nothing more than palliation was intended by the operation; and certainly no intention could have been more promptly and satisfactorily answered. It seemed somewhat singular that so little trouble should have been caused by reaccumulation of fluid, between the first and second tapping, when account was taken of the amount of compression of the lung necessarily resulting from the presence of so much liquid. I have, in other instances, been struck with the fact that the subsequent difficulties are not nearly so marked as those which have preceded the first abstraction of serum, even when the amount of fluid secreted has been apparently as great.

Case 7.*—John Colbert, aged 26, hatter, admitted to Bellevue Hospital, September 9th, 1857. Parents living and healthy; habits intemperate, being almost always drunk from Saturday night till Monday morning, and frequently during the week.

Had never complained of illness until three months before admission, when he was taken with acute pain in the right side, severe cough, and copious expectoration of bronchitic character. For these ailments, he was treated at a dispensary, and was enabled to resume his work in a week.

Three weeks later, exposure to cold, after a debauch, gave him a stiff neck, and brought back the cough of which he has

* Reported by Dr. E. W. Lambert.

not since been free. He continued at his trade until about the last of August, gradually losing appetite and strength, when he was forced to give up work. Dyspnœa, of which he had complained somewhat previously, increased in a marked manner after this. His bowels have been costive—urine very scanty. A gonorrhœa of six weeks' duration is yet uncured.

On admission, his face was cyanotic and anxious; pulse and respiration much quickened; dyspnœa so great that he has not lain down to sleep for a week; stridor accompanying inspiration and cough, which was frequent and dry. Very great distention of right chest, which measured, at level of nipple, twenty inches—two inches and a half more than the left; displacement of liver and of stomach downwards, and of the heart's apex, which beat three inches to the left of the corresponding nipple; very marked prominence of the right infraclavicular and mammary regions. Complete dullness on percussion over whole of right chest, extending three and a half inches beyond the median line. Vocal vibration strongly marked over left side; absent over right; no vesicular murmur where dullness was noted, except that transmitted from right lung, which was puerile; bronchial respiration and broncophony audible at summit of lung on affected side. No abnormal heart sounds.

Having had death suddenly occur from laryngismus in a very similar case (*N. Y. Medical Times*, vol. iii., p. 112), I decided, at once, to resort to thoracentesis for the man's immediate relief. Having propped him up in bed, with pillows, the instrument of Wyman was used, the puncture being made in the fifth intercostal space, midway between the sternum and spine. *One hundred and ten ounces* of bloody serum were slowly pumped out. With the evacuation of this, respiration became tranquil and easy; the mammary, hypochondriac, and epigastric fullness disappeared; the heart's apex approached to within a quarter inch of the nipple; the cough and stridulous breathing ceased. Towards the close of the operation, there was slight return of cough and feeling of oppression, referred to the sternum, of which so many have complained, when a certain amount of fluid has been discharged. The trocar was now withdrawn, and the puncture covered with adhesive plaster. During the tapping, no complaint had been made of pain; but constant expressions of relief were uttered. He asked for a drink of brandy and water, rather because of his attachment to the mixture than from any sense of faintness. The bandage was snugly applied to his chest, and he was put to bed, with direction to have a dose of morphine, at bed-time. Pulse 96; respiration 24.

September 15th.—No return of any trouble for nearly a

week, when dyspnœa was observed, but in a comparatively slight degree. The kidneys, under the diuretic action of the carbonate of ammonia, administered as in case VI., secreted abundantly for several days. Has slept well and been able to eat and digest his food. Physical examination showed that there was still a large quantity of fluid in the pleura. The dullness did not extend beyond the median line; apex of heart immediately under left nipple; right chest measured twenty inches, the left eighteen and three-quarter inches; pulse 96; respiration 24; has had no stridor of voice, cough, or inspiration since tapping; is able to lie on his back without any difficulty.

Operation repeated as before; *eighty ounces* of similar sanguinolent fluid removed. Morphine and carbonate of ammonia as before.

September 22d.—Progress since last date perfectly satisfactory. Thinks he is "as well as ever," and would like to go out. Physical signs denote the existence of a certain quantity of fluid, and the heart has only changed a little to the right. Operated and withdrew twelve ounces of the same kind of liquid as was previously met with.

September 29th.—Went out to resume his occupation.

October 6th.—Readmitted, to see if there was necessity for another operation. Examined by Professor A. Clark. Respiration heard over entire right chest, posteriorly, and as far down as the fourth rib in front; no dyspnœa; no cough; each side measured eighteen inches.

December 5th.—Has not returned to Bellevue, as he promised to do, in case of any relapse.

The source of the blood noticed as coloring the serum was not ascertained. When the man first came under observation, I was inclined to think it might be due to some cancerous growth near the root of the lung. The marked and apparently permanent amendment would make this theory highly improbable. Finally, it was considered due either to hæmorrhagic pluerisy of the ordinary kind, as nothing in the history of his case pointed to personal injury by violence having given origin to it. The fluid was carefully analyzed by Dr. H. B. Sands, and nothing but blood corpuscules and epithelium found. So great was the quantity of albumen that, on being allowed to stand, after withdrawal from the body, it formed a solid cake, as perfectly moulded in the bowl, as we see isinglass jelly from a confectioner's form. The result of tapping in this case disappointed my prognosis, which was unfavorable, on account of the man's drunken habits, the nature of the fluid, and the state of extreme distress in which he was at the time.

Case 8.—Bartow R., aged 15, with no hereditary tendency to disease, and of previous good health, was taken with measles about the first of May, 1857.

I saw him on the 10th of July, in consultation with his attending physician, Doctor Barber, of East Brooklyn, and Doctor Francis U. Johnston, Sen.

From the measles, our patient had recovered sufficiently in a week to be out of bed; but had not got well of the cough attending the exanthem. The weather was wet and cold, giving rise, it was thought, to an attack of catarrhal croup, of which he was relieved by an emetic of ipecacuanha. On the following day he was seen by Doctor Barber, who found him complaining of cough, without expectoration, pain in the right side, and fever. These symptoms continued until my visit, with no change, except that the fever was marked by evening exacerbation, and that, for the last three weeks, he had raised a good deal of muco-purulent matter, with his cough. This occurred frequently, and came on in suffocative paroxysms. For a few days after he continued to expectorate; the sputa were of ordinary colorless, aerated mucus, streaked with blood; during the last ten days they have had a greenish yellow color, are quite offensive, and amount to a pint in twenty-four hours. He has lost twenty pounds in flesh since the commencement of his illness. Night sweats, for a month, have been very profuse. Dyspnœa extreme; pulse 140; respiration 30; unable to lie on left side from feeling of suffocation. Bowels moved regularly every second day; urine free.

July 10th.—Right side of chest obviously larger than left; no intercostal motion, on inspiration; dull percussion from clavicle to below margin of ribs; over lower two-thirds, no respiratory murmur; above this, bronchial respiration, and ægophony; liver and stomach displaced, downwards. On left side healthy percussion note and vocal sound; puerile breathing; exaggerated action of intercostal muscles.

With Wyman's apparatus, the patient lying on the edge of the bed, a puncture was made in the sixth intercostal space, midway between spine and sternum and *forty ounces* of greenish-yellow, offensive pus were discharged, the fluid resembling very much that which he has expectorated of late. During the operation there was no sense of discomfort, and the dyspnœa became much less marked. The roller bandage placed around his chest was not tightened until after the trocar had been removed. His excessive debility and difficult breathing rendered it necessary to supply him with wine and water several times during the early part of the tapping. After it was over,

he expressed marked relief, and was enabled to take a long breath without trouble.

I did not think it advisable to allow a free discharge of pus from the opening made, on account of the extreme condition of prostration to which the patient had been previously reduced. I wished him to have a few nights of refreshing sleep, and to gain a little more strength before making a permanent fistulous opening. Ordered to be well fed with nourishing soups and to have milk punch every day. Iron and bark as tonics.

July 15th.—Much better in every way; appetite improved; breathes freely; sleeps comfortably on sound side; night sweats less copious; no suffocative cough; expectoration unchanged, except diminished in amount; pulse 135. With the trocar of Schuh, I withdrew *twenty-six ounces* of pus, similar to that first removed. The opening was again closed as on the former occasion, and the supporting and strengthening treatment advised. Relief of cough and dyspnœa.

July 22d.—Improvement continued until the 19th, when I found a decided change for the worse, as regarded pain in the side, cough, expectoration and dyspnœa.

A puncture was made with an ordinary trocar, at the same point that had been chosen on the former occasion, and *forty-eight ounces* of pus were discharged. The odor, although unpleasant, was not fœtid, as at first. Having no lead wire, I had procured some of the fine silver threads used by Doctor Sims in his plastic operations, and doubling them until they were as large as a common tent, I bent them into the T shape, and introduced the stem into the opening made by the trocar. The arms were secured in the ordinary way, with adhesive strips, and the roller bandage applied to the thorax. Great and immediate relief ensued.

July 26th.—Amendment continues; no dyspnœa worth mentioning; cough very trifling; sputa colorless, aerated mucus; sleeps well; sits up, and can walk across the room unassisted; appetite and digestion good; pulse 130; pus discharged from fistula laudable, without unpleasant odor; no inflammation around wires. Continue the same treatment and see that the orifice be kept well opened by the daily introduction of a probe, if necessary.

September 6th.—Pulse 120; respiration 30. No night sweats; no cough for a week past; appetite and sleep healthy; is able to take a long walk or ride without fatigue or inconvenience. Has been troubled only once by the chest symptoms, when apparently something obstructed the flow of pus. The introduction of the probe freed the opening and relieved him of the cough, expectoration, and dyspnœa.

Chest much collapsed on right side, especially flat in infra-clavicular and mammary region; smaller in circumference than left side; left shoulder an inch higher than right; comparatively dull percussion over affected side; bronchial respiration and broncophony at upper half; puerile breathing over left lung. To continue the general treatment formerly ordered.

December 8th.—Has increased to within ten pounds of his ordinary weight; no cough; no expectoration; no return of night sweats; has occasional heat of skin in the evening; no dyspnœa, except on exertion; sleeps well; appetite good. Bowels regular and urination free; discharge of pus averages four ounces in twenty-four hours; is not fœtid; pulse 108; respiration 30.

Considerable deformity from lateral curvation of the spine, consequent on the caving in of the right chest. This measures an inch and three-quarters less than the left, on a level with the nipple. The right shoulder is two and three-quarters inches higher than the other. Left chest, which seems, on inspection, to perform almost all the respiration, resonant on percussion; respiration full and free; no morbid auscultatory sounds. Dullness over lower third of right side with broncophony and harsh respiration in front and behind; laterally no respiratory murmur. This is distinctly heard over upper two-thirds of affected side. To continue analeptic treatment, and to take cod-liver oil, if the stomach will tolerate it.

I ascertained that occasionally the orifice when the wires were inserted, would become temporarily occluded by inspissated pus. It was always easy to free it by a probe or by moving the tent. The discharge of pus invariably relieved the feeling of uneasiness, dyspnœa, and tendency to cough which had previously existed. The wires have not been removed for nearly five months.

In this case I should fear the complication with tubercles and a fatal result, had I not cases III. and V. to encourage me. The constant quickness of the pulse noted in the present instance was a marked feature with them, and yet, they were favorable in the end. Although I cannot report the patient as cured, I must, nevertheless, claim for the operation an entire propriety, as both Doctors Johnston and Barber were persuaded that it was the means of averting a speedily impending fatal termination.

I have been led to publish the preceding cases with the hope that their perusal may induce a reconsideration of the opinion entertained by not a few physicians, that the disease whether attended by serous or purulent effusion would do better if left to time and the chance of spontaneous opening, after

failure to effect resorption of the fluid by means ordinarily employed. The cases have been recorded as they have come under my observation, without any selection.

In a recent number of the *London Medical Times and Gazette* (No. 7, 1857), Dr. Barlow stated that "his faith in the usefulness of thoracentesis had very much waned of late. The majority of cases in which it was adopted would, he believed, do equally well without it." It is only by a faithful relation of cases in which it has been employed, that we shall be enabled to assign the true therapeutical value to the operation. In those here recorded, I am confident that it was the only means of giving relief to persons who were in danger of dying by constantly increasing accumulation of fluid, which all other remedies had been inadequate to prevent or to remove.

It seems to me that in cases where we certainly know that pus is contained in the pleural sac, we should look favorably on thoracentesis. In instances of serous effusion, there may be a difference of opinion; but in the former, I should imagine that no physician would expect much beneficial result from the ordinary routine practice which has been spoken of as unsuccessfully used in some of the foregoing histories. The time is now passed when we can surely make a diagnosis by general symptoms, which will let us know the nature of the fluid in question. In the same number of the Medical Times and Gazette from which I have just quoted, mention is made of a case under Dr. Risdon Bennett's care, in which a large pleuritic effusion, of three month's duration, had not in any way been benefited, although "mercurials have been cautiously but fully used, as well as squills, broom, and other esteemed diuretics. * * * * Drs. Barker and Bennett met in consultation, three weeks ago, as to whether the chest ought to be relieved by puncture, but were of opinion that it would be better not to interfere. The man is kept in bed, and suffers remarkably little inconvenience."

Physicians who have seen much of pleuritic exudation, as here considered, will not fail to recall instances in their own experience, where the same conclusions have been come to, and where there were differences of opinion as to the kind of fluid contained in the chest. I scarcely know why any doubt of this nature should have been suffered to exist so long. I do not think the operation of puncturing the chest with Wyman's small trocar, or that of Charrière, any more serious than that of scarifying a child's gums. Surely any medical man would feel much more satisfied in his therapeutical course, if he knew positively whether he had to deal with pus or with serum. The truth is, I suspect that the old traditional fear of opening

the pleural sac from without, has deterred practitioners from the performance of what is, in reality, one of the very simplest operative procedures, whilst it is one entirely devoid of danger.

A few weeks ago, a gentleman who had suffered from pleurisy was referred to me for examination—a difference of opinion having been expressed as to the existence of effusion. I not only decided that there was fluid, but punctured the pleura with Wyman's trocar, and sent back to the patient's physician a two ounce vial filled with the serum thus withdrawn. Five minutes were not consumed in the operation; scarcely any pain was complained of, and he was enabled, immediately afterwards, to proceed to his home in an adjoining State.

In selecting a material for keeping open the fistula where pus has been withdrawn, I know nothing at all comparable with the bundle of fine silver wire, used in Case VIII. It produces almost no irritation; the interstices between the filaments serve as drains, and it may remain for months, without requiring to be removed.

With reference to the posture of the patient, I am sure that the horizontal one is much to be preferred. Formerly, when they sat up, I saw more frequent disposition to syncope, to troublesome cough, and to the unpleasant post-sternal oppression, of which they nearly all, sooner or later, complained, as the pleura was evacuated. The only bandage I find necessary is a simple roller, four fingers' width, passed three or four times around the chest. Usually there is no necessity for its use until the close of the operation.

As is the case, generally, I advocate the careful exclusion of air in cases of serous effusion, and a permanent fistulous opening where the fluid is purulent.

34 East Fourteenth street.

ART. III.—*Case of Cancroid Ulcer of the Os Uteri—Excision of the entire Cervix—Recovery.* [With an Illustration.] By C. E. ISAACS, M.D., Consulting Surgeon to Kings County and Blackwell's Island Hospitals, etc.

ON the 29th of May, 1857, I was requested by Dr. F. A. Thomas, 759 Third Avenue, to visit with him in consultation Mrs. ———, a married lady, about fifty years of age, and the mother of several children. I found her to be a person of rather thin, spare habit, and of delicate constitution. The countenance was expressive of long continued suffering, and the complexion exhibited somewhat of the slightly yellow, waxy appearance, so often seen in those who are the victims of malignant disease. Menstruation had ceased five years previously. She had been confined to her bed since September last, and had been under the care of different practitioners, without much benefit. For many months past she had complained of frequent, severe and dragging pains in the lateral and inferior regions of the abdomen, pain in the cervix uteri, a slight inodorous leucorrheal discharge, pain and heat on the top of the head, indigestion and constipation, obliging her to resort often to purgatives. The tongue was furred, and there were occasionally febrile symptoms, etc.

On examination by the speculum, I saw an oval-shaped ulcer, with everted edges, nearly the size of a ten cent piece, elevated about the eighth of an inch above the surface of the os uteri, upon one side of which it was situated. This ulcer was smooth, entirely destitute of granulations, insensible, and bled slightly upon touch. It resembled in some degree the outer surface of the convolutions of the fresh brain, when the pia mater has just been removed, but presented also a peculiar, partially transparent or glassy appearance. I showed this to my friend, Dr. George T. Elliott, of Bellevue Hospital, and also to Dr. Thomas. They both concurred with me in the opinion that it was malignant, and that it would be advisable to destroy it, if possible, by the actual cautery. This was accordingly done—the patient experiencing no pain or subsequent hemorrhage, or any other unpleasant symptom.

At the expiration of a month I made an examination, and found that the ulcer had again appeared, and presented the same size and character as before. I applied the actual cautery again, and at the end of two weeks found that it had reappeared—appearance unchanged. I then made a third application of the hot iron, and at the end of sixteen days found the ulcer larger than it was before. I now made another and final application of the actual cautery, much more deeply and pro-

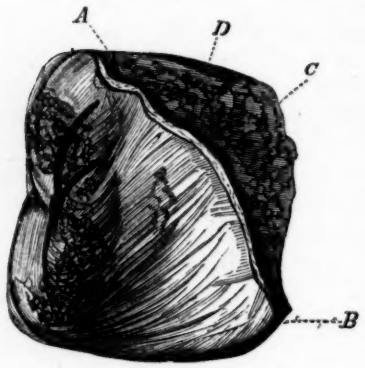
foundly than before, and at the end of another fortnight discovered, to my great disappointment, that the ulcer was now so large that it almost covered the entire os uteri; the edges were much more elevated and everted, and it bled upon the slightest touch. I removed a small piece of the ulcer with a pair of bullet forceps, and placed it under the microscope, when it presented most clearly and indubitably the appearances usually seen in specimens of cancroid or epithelial cancer. During the above period, the patient had been kept upon a tonic and supporting plan of treatment, the bowels had been regulated and her health had somewhat improved. I now explained to her fully the nature of her case, and that in all probability nothing could remove her disease, except the entire excision of the neck of the womb, but that I would advise a consultation of physicians to determine what should be done under these circumstances.

On the 10th of August she was seen by Dr. Sabine, Dr. J. C. Hutchison of Brooklyn, Dr. Thomas, and myself, when it was explained to the patient and her friends, that the complete removal of the disease, by extirpation of the cervix, although attended with considerable risk, yet afforded her the only chance of recovery. She at once consented, and having placed her fully under the influence of chloroform, I proceeded to perform the operation with the assistance of the above-named physicians.

The patient lying on her back with the hips near the edge of the table, I introduced a couple of very long and strong hooks (firmly fixed in wooden handles) very carefully into the vagina, protecting the soft parts with great caution, and placing the points of my fingers upon the sharp ends of the hooks until I was enabled to implant the hooks *firmly and deeply* into the substance of the uterus, at as high a point as the reflection of the vagina would allow. I then drew down the cervix very slowly and with great caution.

This I found to be a very tedious and difficult part of the operation. The cellular tissue had apparently become condensed, by the actual cautery, and the parts yielded very slowly and reluctantly to traction. At length, after some effort, I succeeded in dragging down the cervix, so that a considerable portion of it was outside the vulva. With the view of protecting the inferior wall of the bladder from injury, I then made with a scalpel a curved incision an inch long, across and through the mucous membrane of the vagina, which covers the superior surface of the cervix. This incision enabled me to push with the finger and handle of the scalpel the mucous membrane from off the superior surface of the cervix, back

to the point where I wished to excise it. (See plate.) I now placed around the cervix the écraseur of Chassaignac at the desired point of division, but found, after repeated trials, that from some imperfection the instrument would not work, and threw it aside. I then introduced above the intended point of section or division, a pair of large, strong, and slightly curved scissors, and cut through one-half of the cervix, cutting from above downwards. Three or four small arteries bled freely, requiring the ligature. I next divided the remaining half of the cervix with the scalpel. Two or three small vessels were then tied. I then brought down the *stump* of the uterus with the hooks, which still remained *in situ*, and as this bled considerably from many very small vessels, I applied to the bleeding surface the actual cautery.—The hemorrhage then ceased.



From *A* to *B*, line of incision through the mucous membrane, and from which it was pushed back from the denuded surface of the cervix, as far as to the point of vertical incision, *C*. *D*, superior edge of cervix, corresponding to the inferior wall of bladder.

The hooks were now removed, when the uterus immediately ascended into its usual and previous position. The loss of blood amounted to a few ounces only, yet the patient was somewhat prostrated, but soon rallied under the use of the ordinary stimulants. There was a slight oozing of blood, perhaps to the amount of an ounce during the night.

No unfavorable symptoms afterwards occurred, although the patient, from motives of prudence, was confined to her bed for four or five weeks, occasionally sitting up for a short time during the day.

Since then, she has gradually greatly improved in health, and is now able to take long walks, and ride several miles about the country, etc.

The severe dragging pains and other symptoms referable to the uterus have entirely disappeared, but she is occasionally still somewhat troubled with derangement of the functions of the large intestines.

On examination with the speculum, I find the vagina (which is naturally very long) terminating in a conical cul de sac, at the end or bottom of which, is a small rounded button-like mass, about as large as the end of the little finger, of a slight

pinkish grey color, and apparently healthy. This is all which remains of the cervix uteri.

I may here mention that immediately after the operation, I examined the cut edge of the removed cervix under the microscope, and found it to be perfectly healthy. Not a trace of the disease could be found at that point, nor within three-fourths of an inch of it.

Considering the fact that the entire cervix uteri was removed, and that cancroid cancer is less liable to return than any other form of malignant disease, may not the operation be considered as in all probability permanently successful?

ART. IV.—*On Irregular Development of the Infantile Cranium, and the Etiological and Prognostic Importance of the Premature Closure of the Fontanels.* By A. JACOBI, M.D., Physician to the Children's Department of the German Dispensary, etc., New York.

THE development of the various organs of the infantile body, generally proceeds in an equable measure. Only the skull, with its contents, seems sometimes to form an exception to this rule. Compared with the whole body, the infantile head is large; its blood-vessels are in due proportion to its size, and before the closure of the sutures, the blood-vessels of the brain and of its membranes, finding less resistance from outside pressure, are expansible in a higher degree than are those in other parts of the body. In consequence, then, of increased upward motion of the blood, we find that in children the development of the skull, jaws, and teeth, and the frequency of inflammatory and exudatory diseases of the brain and its membranes, go hand in hand; they are coördinate effects of the same cause. The bones of the infantile body develop themselves with the same equability as its other parts. Protracted teething, retardation of the closure of the fontanels, retardation of walking, usually coexist, and are not at all favorable symptoms, being but too frequently the first signs of rachitis. Nor is prematurity of teething, of closure of the fontanels, and of walking, very rare.

Exceptions to the rule, in which the skull is developed in proportion to the other bones, are frequently found. Their causes can hardly be defined. Both parental constitution and maternal blood are, no doubt, of some influence. This is, however, not without restriction, as robust children are frequently born of weak mothers, and *vice versâ*. Climatical and typical peculiarities seem also to account for some of the differences in

the formation of the cranium. Thus, Edwards* asserts that in the West Indies the coronal juncture is broad, and remains open for a longer period than in cold countries. As to the custom of the natives, of pressing downwards the os frontis and os occipitis, he thinks it might be explained by the instinctive endeavor to effect an earlier closure of the fontanels and the cranial junctures in general. Schoepf Merei† thinks himself justified in assuming that the large fontanel closes later at Manchester, England, than at Pesth, in Hungary. Many similar facts are brought to light by comparative observations. Thus, we are informed by Mauthner,‡ that the skulls of Slavonian children are more compact, disproportionate, and clumsy, larger in every dimension, and more subject to hyperostosis, than those of Hungarians. And Gratiolet observed, that the cranial sutures close later in the white race than in the black one, and that the coronal suture, being the first to ossify in negroes, is the last to do so in Caucasians.

It is to be considered a law, that the incisors cut, before the closure of the large fontanel takes place, this being followed only by the ability of walking. In the average, the first incisors make their appearance at the age of six or seven months, the large fontanel is closed at twelve, walking ensues at thirteen months. By closure of the large fontanel, however, I do not mean its entire ossification, as this is consummated only with the third year. Some weeks after birth, the large fontanel has a size of a square inch, or nearly so; somewhat less in little and weak children, somewhat more in large and robust ones, and diminishes gradually. The closure of the fontanel is taken to be complete when the fibrous bridge between the osseous margins gives way no longer to the pressing finger, and no pulse can be felt through it. The fontanel is seldom closed before the first incisors have broken through; walking is rarely possible before the closure of the fontanel. Sometimes, however, I have seen children walk without a single tooth in their mouth. Merei relates the case of a child who walked at fifteen, had his first incisors at sixteen, and whose large fontanel had the size of about one-half of a square inch at nineteen months of age. Nevertheless, the child was lively, sensitive, not rickety—which seems fully to prove, that irregularities in the de-

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* L. A. GOSSE: *Essai sur les déformations artificielles du crâne.* Paris, 1855, p. 23.—EDWARDS: *History of the West Indies.*

† A. SCHOEPF MEREI: *On the Disorders of Infantile Development, and Rickets, Preceded by Observations on the Nature, Peculiar Influence and Modifying Agencies of Temperaments.* London, 1855, p. 116.

‡ *Entwickelungsanomalieen am Kinderschädel. Oesterreichische Zeitschrift für Kinderheilkunde,* Nov., 1856, p. 52.

velopment of the osseous system may occur, sometimes, without any morbid symptoms.

The best evidence of a normal development is the regular appearance of the teeth. Eichmann* reports four hundred observations on dentition, from which he draws the following conclusions: The first inferior incisors break through between the 28th and 32d week; the first superior ones, between the 36th and 40th; the first anterior molar teeth, between the 48th and 54th week; the canine teeth, between the 16th and 18th; the first posterior molar teeth, between the 22d and 24th month. At 27 or 30 months there are 20 teeth formed; about this time, or shortly after, the large fontanel has finished its entire and permanent ossification.

Sometimes, however, and indiscriminately so with robust or feeble children, the first incisors cut in the fourth or fifth month. Merei reports the case of a child which had his first incisor at three months of age, and had fourteen teeth when eleven months old. In newborn children teeth are not frequently found. We are told† that Louis XIV., Richard III., and Mirabeau, were born with teeth; one case is reported by Churchill; in another case, Whitehead,‡ in order to facilitate suckling, removed from the inferior jaw of a newborn child two teeth, which were reproduced simultaneously with the appearance of the canine teeth. One case is reported by Fleming, one by Denman, nineteen by Haller. Nor are remarkable cases of unusually protracted dentition more frequent. Among Eichmann's 400 cases, there are a few, in which the first tooth cut at the twenty-second month; in a case reported by Churchill, it cut in the seventh year; and Merei knew a child whose large fontanel closed at four years of age, but whose mouth was still toothless at six.§ I have observed, together with Dr. Herzog, in the "German Dispensary of the city of New York," a child of twenty-six months, without a single tooth, and whose fontanel does not even begin to close. The record of the children's department of the Dispensary contains another similar case of a child two years old.

The following results of Eichmann's seem to be worthy of a particular consideration: Of 20 healthy and robust children, the fontanel was closed in 10 at from 11 to 13 months; in 5 at 13; in 2 at 14; in 2 at 10; in 1 at 15. In 14 of them, the first

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* Schmidt's *Jahrbücher der in-und ausländischen gesammten Medicin.* 1853, No. 12.

† Fleetwood Churchill, M.D.: *Diseases of Infants and Children.* Second Am. Ed., p. 417.

‡ Merei, p. 118.

§ L. C., p. 119.

teeth cut at from 6 to 8 months; in 4 at from 8 to 9; in 2 before the 6th month. Consequently there is, in healthy children, an interval of from 4 to 7 months between the cutting of the first incisors and the closure of the large fontanel.

Of 8 feeble or sickly, but not rickety children, the large fontanel was closed in 6 at from 11 to 13; in 2 at from 13 to 14 months of age. In 7 of them the first incisors cut from 4 to 7 months before the closure of the fontanel; in 1 the cutting of the first tooth, which took place at 13 months, was directly succeeded by the closure of the fontanel.

Of 8 rickety children, the fontanel in 3 was closed in the 13th month; symptoms of rachitis developed themselves immediately afterwards. The incisive teeth came at the regular time; the other ones too late. In 3 the closure of the fontanel took place between the 16th and 19th month, the first tooth having cut at 12 months, and being followed by the rest in rapid succession. In 1 the large fontanel was open at 19 months; the first teeth cut at the regular time, but at 18 months there were only 8 of them formed. In 1, rickety also before the 11th month, the fontanel was not closed, and the mouth toothless, at the age of 25 months.

The completion of the cranial sutures is often delayed in spite of a normal condition of the brain. Sometimes the ossification in newborn children is deficient; in such cases it may have started from the usual points, but the bones are thin, their periphery fibrous, or there are fibrous gaps in the osseous structure. Both the circumference of the skull, and the general development of the children, may be entirely normal in such a state of the osseous structure of the cranium. Sometimes, however, abnormities are found, as, for instance, hydrocephalus. In some cases the fault has been attributed to constitutional diseases of the parents, to pathologico-anatomical peculiarities of the maternal pelvis. Abnormal sutures also may be found, the ossa frontis, occipitis, temporum, parietalia, remaining each divided as in the fœtal state. Or there are the so-called ossa Wormiana, results of normal ossification, but proceeding from an unusual abundance of starting points, in groups of sometimes such a remarkable number, that Meckel met with and counted two hundred of them in one individual.

It is, however, the premature solidity of the cranial bones, which we consider as our special subject in these pages. Sometimes it is inborn, and the result of the inflammations suffered during fœtal life; in such cases an osseous elevation may be felt along the sutures. The size and symmetry of the skull depend upon both the advancement and seat of the ossification of the sutures, and the adjustment of those parts, which are not ossi-

fied. For the growth of the flat cranial bones, which commences from the sutural substance, ceases after the ossification is consummated; and the brain itself cannot increase its volume, except by forcing asunder the sutures, or by partial resorption of the inside of the cranium. As evidence thereof, we have the so-called teeth of the sutures and the digitated impressions.

The variety of forms of the cranium produced by the earlier or later, partial or total synostosis of all or some of the sutures is very large. For discerning these various forms, R. Virchow* has successfully adopted a terminology, similar to the one used by Retzius, for discriminating the varieties of races by skulls.

1. Macrocephali, large heads; general circumference of the head too large. Hydrocephali, waterheads.
2. Microcephali, small heads; general circumference of the head too small. Nannocephali, dwarfheads.
3. Dolichocephali, longheads.
   - *a.* Simple dolichocephali, synostosis of the sagital suture.
   - *b.* Leptocephali, narrow heads; lateral synostosis of the frontal and parietal bones.
   - *c.* Sphenocephali, cuneated heads; synostosis of the parietal bones, with elevation of the region of the large fontanel.
   - *d.* Clinocephali, saddleheads; synostosis of the parietal and sphenoid bones.
4. Brachycephali, shortheads.
   - *a.* Simple brachycephali, bigheads; synostosis of the parietal bones with the occipital bone.
   - *b.* Plagiocephali, oblique heads; synostosis of the frontal with one parietal bone. Where a considerable adjustment takes place: Platycephali, flatheads.
   - *c.* Oxycephali, pointed heads, sugarloaf heads; synostosis of the lambdoid and squamous sutures.

We have found, that ossification of the sutures leads not only to asymmetry of the cranium, but to the entire cessation of the growth of the cranial bones. The cerebral functions depend to a great extent upon the size and symmetry of the cranium; in cases of considerable diminution and asymmetry we are almost certain to find, that not only the intellectual faculties, but also those of locomotion and sensibility are injured. Convulsions, deafness and dumbness, failing of the sexual instinct are known to be frequent consequences of an early and extensive synostosis of the sutures. Where it is limited to one side or

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* *Verhandlungen der physicalisch-medicinischen Gesellschaft zu Würzburg.* 1851, vol. ii. 230.—1852, vol. iii. 247.—1856, vol. vii. 199.—R. Virchow: *Gesammelte Abhandlungen zur wissenschaftlichen Medicin.* Frankfort, 1856, p. 891.

locality, an adjustment is possible in the direction of the yielding, unossified parts; in such cases the cerebral functions may be nearly or wholly normal. Other less favorable cases look like the one of osteosclerosis cranii, not long ago reported by Schützenberger.* The disease lasted about four years, before the continually increasing compression of the brain by the hard, compact, and eburnated cranium, succeeded in effecting the death of the patient, who had endured all his life frequently repeated faintings, a long series of epileptic and tetanic attacks, abnormal irritability, mental weakness, and, at last, idiocy.

With the only exception of the macrocephalic—hydrocephalic—form of the cranium, there is none which has been studied with so much eagerness and success, as the microcephalic one, particularly it its relation to the diminution of mental faculties. Baillarger† saw, in a village of southern Switzerland, three microcephalic idiots, whom their mother reported to have been born with their skulls perfectly closed and solid. Two other children of hers, who were well developed both bodily and mentally, had their large frontanel open for a long while after birth. Similar facts he learned from another woman, who was mother of one microcephalic idiot, and some other children of normal development. Furthermore, he describes the cranium, in his possession, of an idiotical child, 4 years old. Its dimensions are very small indeed, the largest circumference not being thirty-five centimetres. The coronal suture had disappeared entirely; not less so the frontal suture, the inferior part of which was indicated by an osseous prominence. Only the lambdoid suture was slightly discernible.

Similar cases have been observed by others. Vrolik, of Amsterdam, knew an idiotical boy of 7 years, whose cranial sutures had entirely disappeared. Cruveilhier reports the case of a child 18 months old, without any discernible sutures. There was, besides, instead of the normal, external occipital protuberance and the semicircular line, a transverse, very sharp osseous prominence. The vertical diameter of the cranium was as short as one inch. There had never been even a vestige of intellectual faculties.

After all, premature cranial ossification, although there may be many other cases of idiocy, is deserving of every consideration. The normal human brain differs from the animal not only in its relative volume, but also in its growth. Besides, the fontanel of the human cranium is not found in animals, with

* *Archives générales*, 1856. No. 8. † *Gazette des hôpitaux*, 1856. No. 91.

the exception only of apes, who have, for a short time after birth, small and rapidly ossifying fontanels. Therefore, Baillarger, taking into consideration both the growth of the brain, and the premature ossification of the cranial sutures, thinks himself justified in comparing microcephalic idiots to animals. Gratiolet did not even stop here, but asserted, that there is a direct relation between the earlier or later ossification of the sutures, in the different races and types of mankind, and the height of their intellectual faculties. He states, as we have mentioned above, that the cranial sutures close later in Caucasians than in Negroes, and particularly, that the coronal suture ossifies early in Negroes, late in Caucasians. For this reason a proportionally late ossification of the coronal suture seems to be favorable to intellectual development. The high forehead also, of the Caucasian, and the low one of the Negro race are evidently depending on this physiological fact.

A frequent consequence of precocious synostosis of the cranial bones is epilepsy. In a great number of epileptics the form of the cranium is anomalous; in proportionally few cases it is too large, hydrocephalic; in most of them it is too small, and spherical or pointed. The most important characteristic, however, is asymmetry, the head appearing, as it were, compressed from a lateral, anterior or posterior direction. Among forty-three epileptics, recorded by Muller, of Pforzheim,* the heads of thirty-nine were asymmetrical; in the majority of them there was, besides, hyperostosis of the cranium. The older a case of epilepsy, especially if it dates from the first years of life, the more the cranium will be dense and eburnated. Epilepsy originating at this early age, is considered to be the most critical and incurable, leads often to, or is complicated with idiocy and shortens the duration of life.† I have been informed by Dr. Schilling, of this city, of the case of a girl, 8 years old, who has been suffering for some years past from epilepsy, which, led by anamnestical facts, he does not hesitate to trace back to premature synostosis of the cranial junctures. I have been attending for the last four or five months a girl of 15 years, whose menses are regular and pretty copious, who has been suffering since her second year, once, twice, or three times every day of her life from epileptic fits, which I can, by every possible evidence, attribute to the same cause.

Epilepsy is rare in new-born children—frequent after the first dentition. Hyperostosis of the cranium, particularly in cases dating from early childhood, seems also to prove, that too

* R. Virchow: *Handbuch der specialen Pathologie und Therapie*, vol. iv. i. 268.
† Romberg: *Lehrbuch der Nervenkrankheiten*, p. 697.

rapid and abundant ossification of the cranial bones, before the brain has attained to a sufficient growth, and the compression of the brain produced thereby, are among the causes of epilepsy. Every case of this kind is illustrated by Travers,* who reports the case of an epileptic boy suffering from compression of the brain which was caused by a particle of the fractured cranium. There was no other fit, after the fractured bone had been removed.

According to Chazeauvieilh,† of sixty-six cases of epilepsy, eighteen occurred in the first lustrum, eleven in the second, eleven in the third, ten in the fourth, five in the fifth, four in the sixth, one in the seventh, two in the eighth, one in the ninth, two in the tenth, one in the twelfth: that is to say, more than twenty-seven per cent. come under the first five years, and probably even occur between the second and fifth year of life. This is just the period of infantile development, in which irregular ossification may begin to prove dangerous. For, as Romberg emphatically asserts, the orgasm of the brain, inclosed as it is in unyielding osseous walls, cannot but favor the transmission of remote irritations to the corpora quadrigemina and the oblongated spine, and thereby produce irregular reflected motions. On this principle, convulsions are the habitual consequences of cerebral hypertrophy, which is frequently combined, too, with hypertrophy of the cranium.

Every symptom in all the objects of the foregoing exposition can be explained, as it were, by a relative hypertrophy of the brain—that is to say, by a disproportion between the closed and narrow skull and the inclosed and growing brain. Such, however, is the similarity between the symptoms of some of the most different cerebral diseases, that a distinct diagnosis of the pathologico-anatomical alterations is not always easy, sometimes very difficult. Laennec,‡ in referring to Jadelot's remarks on the disproportion between skull and brain, has already acknowledged, that he made sometimes serious mistakes in the diagnosis of hydrocephalus internus. He confesses that in a number of cases he met with no water at all, but only with a remarkable flattening of the gyri, which seems fully to prove, that the brain was compressed by its volume being too large and its growth too active—and next, with an extraordinary firmness and elasticity of the cerebral substance. Next

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* B. TRAVERS: *A further Enquiry concerning Constitutional Irritation and the Pathology of the Nervous System*, p. 285.

† *De l'Epilepsie considerée dans ses Rapports avec l'Aliénation Mentale. Arch. Génér.*, 1825, p. 73.

‡ *Journal de Médecine, Chirurgie et Pharmacie*, 1806, vol. xi., p. 669. *Revue Médicale*, 1828, *observations pour servir l'histoire de l'hypertrophie du cerveau.*

to Laennec, in 1824, Hufeland communicated to the profession his observations on cerebral hypertrophy, which he too declared to have often been confounded with hydrocephalus internus. It was he who established a new fact, met with in every such case, viz. the *cerebral hernia*—that is to say, he showed, that in every post-mortem examination, in these cases, the compressed, elastic brain springs forth through the incisions made into the membranes. He is, however, always speaking of an abnormally *large brain within a normal skull, of real cerebral hypertrophy;* and identical with his cases are those reported by Scoutetten, Meriadec, Laennec, Burnet, Papavoine, Cathcart Lees, Barthez, and Rilliet.

Some years ago, I had occasion to observe three unmistakable cases, the reverse of those treated of above—that is, *cases of an originally normal brain in an abnormal cranium*, this having remained *too narrow in consequence of premature synostosis of the fontanel and sutures.* This narrowness, however, was the only anomaly; for the process of ossification would not have been irregular at all, if it had ended some months later; there was no constitutional disease of any kind, not even a sign of hyperostosis, or of preceding inflammation. The three patients, who came under my observation in August, 1851, in the fall of 1855, and in August, 1856, were children—two ten, and one eleven months of age—the first one a male, the other two females. All of them were *well developed, had been robust and apparently always healthy.* The third one was said to have, in the last months preceding her death, from time to time, cried vehemently and suddenly without any manifest cause. In neither of these cases was it possible to perceive weakness of intellect, apathy, somnolence, and feebleness of the extremities, all of which symptoms Cathcart Lees considers as indispensable signs of genuine hypertrophy of the brain. In the first case it was stated that the child lost his habitual brightness and liveliness about a fortnight before the symptoms became severe; in the other cases, this failing could be observed but a day or two before symptoms of depression of the brain were visible. The children grew sleepy, almost soporous, the pupils enlarged; vomiting soon followed. From time to time, they exhibited, especially the third patient, light intermediate signs of irritation. Contractions of the extremities came next, and, in short, all the graver signs of depression of the brain. The soporousness increased so as to become complete unconsciousness, every sensual function being totally paralyzed; and at last, death ensued with clonic convulsions.

The picture I have given of this disease is the almost exact likeness of the *last stage of the inflammatory and exudatory*

diseases of the brain and its membranes in general. Its distinct diagnosis is, therefore, sometimes impossible, and always difficult. The present state alone of a patient, who lies prostrate, with all the symptoms of depressed brain, will not enable a medical man to get a clue to what has preceded. Sometimes he will obtain anamnestical facts, the best of which is, at all events, *the knowledge of the condition of the large fontanel and cranial junctures.* In this manner, I was enabled to make an exact diagnosis in the cases of my last two patients. I found that in the children, ten and eleven months old, the large fontanel was entirely closed, and no pulse could be felt through it. In the last case, the parents, without any suggestive questions of mine, and only induced to do so by my examination of the fontanel, told me, that the fontanel of another child of theirs, who had died two years before, at the same age, and under the same symptoms, was also closed long before death.

In the first and the third case I was allowed to make a post-mortem examination. The result was alike in both of them. There was nowhere a pathological alteration to be found, except the *abnormal solidity of the cranium* and the following state: The cavity of the cranium was completely and compactly filled up by the brain; the membranes were pale. *No signs of inflammation or only hyperæmia.* The sinus narrow; *gyri flattened;* the substance of the *brain dense, elastic, difficult to cut;* of an apparently considerable specific weight. The grey substance was whitish; fluid not remarkable in quantity in the ventricles. There was *no disproportion* between the different parts of the brain, a symptom, which never fails in genuine cases of cerebral hypertrophy; this being but an increase of the white substance, while the grey one remains unaltered, and affecting neither the middle part of the brain nor the cerebellum, while the pressure of the unyielding cranium, when no adjustment has taken place, operates in every direction, and affects every part of the brain, which may be sound in every other respect.

The abnormal state of the cranium and the brain which I treat of, is almost overlooked by the best authors on diseases of children, Rilliet and Barthez. There is only a short notice in their book relating to premature closure of the cranium as being a cause of induration of the brain, and they seem to be so little aware of the intrinsic difference between induration of the brain and its hypertrophy, that they treat of both of them in the same short chapter (the fifth of their first volume.) So does Churchill, l. c. p. 178. Even Förster,* one of the most

* A. FÖRSTER, *Handbuch der pathologischen Anatomie*, ii. p. 427.

excellent authors on pathological anatomy, scarcely mentions our subject, so that in treating of "induration of the brain," he says: "Increased consistency of the whole brain, or total sclerosis, is a normal occurrence in old age, and of the same frequency, but less importance, in intoxication by lead, in typhus, cholera, puerperal peritonitis, scarlatina. Only in intoxication by lead where induration is combined with atrophy, it reaches such a height as to affect seriously the cerebral functions. In other cases the increased consistency of the cerebral substance is of some interest only when found in post-mortem examinations, and is usually produced by copious exudations, leaving the brain deprived of its parenchymatous serum. High degrees of total sclerosis are met with only in atrophy of the brain."

Cases of sclerosis of the brain are met with, sometimes, in reports on post-mortem examinations; cases, too, of premature closure of the cranial junctures have been communicated to the profession, but in very few of them has an attempt been made to elucidate the evident relation between these two anomalies. One very good observation was published, some months ago, by Prof. Mauthner, of Vienna.*

Case.—Mary F., 3½ years old, is said to have suffered, 1½ years ago, by convulsions, caused by a fall on the occiput. She has been sickly ever since. When taken to the hospital, she exhibited the following state and symptoms: The child is emaciated, feeble; hair of a light brown color, cranium remarkably small and hard, particularly so in the occipital region; the countenance has a suffering expression; lips and tongue are red. The child sucks her thumb continually. The abdomen is concave; the lower extremities are drawn to the abdomen; pulse thin and much accelerated; sleep restless. Evacuations dry, rare.

Treatment.—Four leeches on the mastoid region. Carb. Magn. to facilitate defecation.

Two days later, June 11th.—The child moans frequently; sleeps very little. No evacuation. Sulph. magn. ʒi., aq. ʒiii.

The following day one evacuation. Constipation again to the 16th, when jalap ʒss. was required to open the bowels. No change in the other symptoms, only the emaciation and feebleness of the patient are increasing. Three convulsive attacks, of only two or three minutes each, occurred during the night.

July 2d.—The child continues to moan and whine. Hands cyanotic; abdomen hard, somewhat inflated; skin dry. One

* *Oesterreichische Zeitschrift für Kinderheilkunde*, Sept., 1857, p. 561, *sclerosis cerebri ex microcephalia.*

convulsive attack in the morning. Sucks her thumb. Constipation of the bowels. Carb. magn. gr. x., aq. ʒii.

July 5th.—The child is very low; has fallen off considerably.

July 14th.—Since yesterday ten thin, greenish-yellow passages, mixed with mucus. Hands cold. Dec. salep ʒii., pulv. r. ip. gr. x., syr. simpl. ʒii.

July 18th.—Collapse increasing. Diarrhœa but little better. Pulv. Dov.

The child grew worse from day to day, emaciation going on in rapid progression; appetite lost; eyes hollow; face and extremities cyanotic; temperature of the skin low; passages not so numerous, but thin and mucous. After some days of constant sopor, the patient died on the 25th of July.

Post-mortem examination.—The corpse is very much emaciated; abdomen discolored, greenish, concave; the extremities are flexible. The cranium is of unusual compactness and smallness. The integuments being removed, the distance from the root of the nose to the external occipital protuberance is twenty-two centimetres, from one ear to the other 23½. The circumference of the cranium is forty-two centimetres. While the cranium is getting opened, a great deal of serum is escaping. *The membrane is thick, adheres firmly to the cranium, and can only with some difficulty be removed. The fontanels have disappeared entirely*, the *sutures* are found to have been *ossified long ago.* The left hemisphere is of very small size; its *gyri* are *hard*, of a dirty yellow color, showing signs of atrophy. Between the layers of the pia mater are four ounces of a thin dark serum, mixed with blood. The pia mater of the right hemisphere is slightly injected with blood. The *cerebral substance* is pretty *dense.* The right lateral ventricle is not dilated. All the *nerves* originating in the brain are of a considerable *toughness*, as well as the flattened gyri; pons and cerebellum are normal; *medulla oblongata very hard;* some fibrine coagulated in the longitudinal sinus. The cranium is as thick as one centimetre about the squamous part of the temporal bone Its longitudinal diameter is 15 centimetres, the transversal 11½.

A very interesting and instructive case, which I was fortunate enough to observe only a few weeks ago, is the following:

Case.—George Z., of Forsyth street, eleven months old, a robust child, was not known to have ever been sick. He became restless and feverish on the first of November, with augmented temperature of the head and slight vomiting. His parents, believing him to suffer from "dyspepsia," made him take an emetic. On the following day he spontaneously vomited twice, the general state remaining as above-mentioned.

Bowels open and water passed freely. I was requested to see the patient at seven o'clock, P.M.

Present state.—Slight clonic convulsions of the muscles of the face and superior extremities; forty breathings in a minute, pretty regular; pulse contracted, 140; pupils somewhat dilated, react on the influence of sudden light, but are floating for a while afterward and dilate again; conjunctiva scleroticæ slightly injected with blood; occiput abnormally warm; hands and feet of normal temperature. The child in general was well developed, the head somewhat large; six teeth cut some months ago; the gum is swollen. The *sutures and the large fontanel perfectly closed*, and have been so, as far as I could learn from the very intelligent relatives, for at least three months.

Diagnosis.—Cerebral sclerosis from mechanical compression of the brain, caused by premature closure of the cranial junctures, increased by cerebral hyperæmia consequent on dentition.

Prognosis.—Probably fatal; the patient may recover from this attack, but only to die by a future one, or at best will become idiotic.

Treatment.—Calom., jalap. aa. gr. j., to be taken every hour; head to be kept under ice.

The convulsive attack lasted for three hours, the muscles of the inferior extremities becoming also affected; there was only one short intermission after copious vomiting. Patient vomited once more at eleven o'clock, P.M. At midnight, fifty-two breathings in a minute, somewhat irregular; pulse as before, 172. Temperature of the occiput even higher than before; conjunctiva scleroticæ more injected. The child no longer fully unconscious.

Nov. 3d, 8½ o'clock, A.M.—Pulse contracted, somewhat irregular, 144; fifty breathings, interrupted by sighing. The child is prostrate, spiritless, with an expression of pain in corrugation between the eyebrows. The right eye more injected than the left one; no more convulsions; bowels have been open three times; water has been passed several times. Patient vomited once, not long after midnight; has taken the breast four times, and is constantly looking around for water.

Four o'clock, P.M.—Took the breast and drank several times; vomited four times; left hand is constantly kept on the parietal bone; pulse as before, 144; respiration sometimes sighing, thirty-eight; eyes hollow, considerably injected with blood; occiput abnormally warm; feet cool, hands cold.

Treatment the same. Hot poultices of mustard and linseed on feet and legs.

Ten o'clock, P.M.—Vomited twice, each time after drinking; took the breast several times; had no convulsions, but shook his limbs under the bed-clothes, from time to time, as if from impatience. Respiration, as above, 35; pulse, 130, somewhat irregular; body warm all over, with the exception of the nose, which was cool. Feels every slight touch; screams abruptly and violently when his eyes are forced open. During sleep, the eyelids half opened; pupils small. After being awakened from his heavy sleep, his pupils are a little dilated; contract by the action of light, but afterwards float, and dilate again.

Treatment.—Calom. gr. j., extr. hyosc. gr. $\frac{1}{8}$ every hour. Ice continued.

Nov. 4th, half-past eight o'clock, A.M.—Pulse and respiration as yesterday; 144; 54. No change at all, with the exception of the patient's vomiting no longer; he is alternately either awake and conscious, or in a kind of heavy sleep; had two evacuations of the bowels, passed water freely. Feet cool.

Six o'clock, P.M.—No change; no convulsions; no vomiting.

Nitr. Sod. ʒij. extr. hyosc. gr. iiss. inf. digit. (e gr. xij.) ʒiij. a teaspoonful to be taken every two hours. Ungt. hydrarg. for external use.

The flexions and extensions of the right superior extremity kept on and increased, the child grew more restless, threw his head from one side to the other, respired more frequently and more irregularly. Nevertheless, about one o'clock, A.M., he took the breast, but only for a minute. The increased irritation was soon followed by unconsciousness and sopor, which lasted for about an hour. With the usual symptoms, œdematous rhonchi, etc., death ensued at half-past two o'clock, A.M., November 6.

Post-mortem examination, four o'clock, P.M., thirteen and a half hours after death. Front side of the corpse pale, back side red and brown, by hypostasis; conjunctiva scleroticæ not injected with blood. Galea aponeurotica pale throughout, except on the occiput, where it is suffused with blood, more so than could be explained by hypostasis alone. All the integuments being removed, about *fifteen white and unusually dense insular spots*, of a diameter of from a twelfth to three quarters of an inch, become visible on the frontal and parietal bones. Cranium not abnormally thick; occipital bone even rather thin; besides, it is hyperæmic, and shows on its inside *digitated impressions* of such an extent as are met with only in adults. The insular spots, being *the places of increased local ossification*, are just as manifest inside as outside. Of *the frontal suture there is no sign.* Between the frontal and the parietal bones, there is no interval, the *large fontanel having*

totally disappeared. Where the large fontanel ought to be, the coronal and sagittal sutures are not wholly ossified, but they cannot be disjointed by any means. Ossification is perfect everywhere else.

The dura mater *cannot be torn from the cranium;* the membrane is of such a thickness and adheres so firmly to the cranium, that it has to be separated from the bone by means of the scalpel. The sinuses are full of blood; so are all the blood-vessels of the pia mater, particularly on the cerebellum; nowhere extravasated blood or any pathologico-anatomical alteration, such as tubercles, exudations, etc.

The *brain large, heavy, solid*, proportionally developed in its several parts; *gyri* numerous and *solid*, some of them evidently *flat*, particularly so on the superior surface of the hemispheres. The grey substance is less hard than the white, but nevertheless is tough and elastic. This is found to be throughout the condition of the cerebral substance. When it is laid open by long incisions, no blood is seen, except when compressed. *Ventricles narrow*, contain no serum. The *pons Varolii* and *medulla oblongata* are *most solid* and dense; they are difficult to cut. The cerebral substance, after having been outside the cranium and handled and turned for at least an hour, remains pretty hard and solid.

Although the diagnosis, in the foregoing case, was clear and fully proved correct by the post-mortem examination, there are some interesting facts apparently contradictory. After the first attack of convulsions, no other occurred for three days, almost up to the hour of death; constipation and anuria, so common in cerebral diseases, were also absent.

Between my last case and the one of Prof. Mauthner, there is one important similarity. The thickness and firm adhesion of the dura mater along the sutures and in the region of the large fontanel, in both cases, seem to prove, that *a chronic congestive or inflammatory process* was both the cause of the pathological alteration of the membrane itself, and of the abnormal deposition of phosphates and carbonates in the flat cranial bones. No such alteration of the membrane was found in my former post-mortem examinations. This difference is strikingly confirmed by the condition of the bloodvessels. In some cases, they *were filled with blood, in other ones the membranes were pale and bloodless.*

In looking over the series of cases and observations referred to, another highly interesting fact will strike us. I have reported the case of a child whose brother died at the same age, with the same symptoms, the fontanel being closed and the sutures perfect. Baillarger, too, reports the cases of three

microcephalic idiots in one family. Nothing of the kind, however, occurred in my last case; the boy had sisters—the oldest one nine, the youngest one three years old—the heads of all of whom are well developed, and even large. The youngest girl is reported to have been remarkable for the pulsations of the arteries being for a long period visible through the integuments of the large fontanel. Therefore, *in some cases of premature closure of the fontanel and the cranial junctures, an hereditary or family influence seems to be absent, while in other ones it cannot be denied.*

Since the preceding pages were written, I have had occasion to assist at the post-mortem examination of a man, thirty-six years old, who died from *sclerosis cerebri*. The facts resulting from this examination, my friend, Dr. Kammerer, who attended the deceased for some years past, kindly allowed me to publish. I feel bound to do so, because this case is most apt to illustrate the subject of this essay, and because, as one of our best authorities on diseases of the brain, Prof. Leubuscher, asserts that cases of genuine sclerosis cerebri are exceedingly rare. The short, but complete history of the case, as communicated to me by Dr. Kammerer, is as follows:

Case.—Deceased, a tailor, is said to have been always healthy. Only two years ago, his countenance began to show a cachectic color; in the epigastric region, a frequent soreness was complained of, which used to be complicated with or followed by vomiting, and the patient grew morose, taciturn, peevish. About the same time, or shortly after, a creeping pain was felt, sometimes in the hands and fingers, sometimes in the feet and toes, which changed very often, and used to alternate, as to its seat, and thereby induced the patient to consider it as rheumatic. His physician, however, was soon led to attribute these symptoms in the peripheric nerves to a cerebral origin, especially when slight and occasional signs of paresis became visible. Four or five months ago, the patient had an attack of syncope, total loss of the mental, sensory, and motory functions coming on suddenly. After this attack, he was sick for about five or six weeks, the main symptoms being a small and feverish pulse, and all the cerebral symptoms of typhoid fever, but no typhous alterations at all in the abdominal organs, and no trace of critical secretions. He never felt well afterwards; nearly every week, an attack of sudden syncope occurred, similar to the one mentioned above, after which the patient used to feel as usual. But the paretic symptoms in the extremities increased, the interval between the attacks grew shorter, and they were preceded by a violent headache, especially in the occiput. In the last weeks preceding death the attacks oc-

curred almost daily, even sometimes every day, and they were preceded by the most intolerable headache, which forced the patient to the most heartrending outcries, and was mitigated by nothing except a close and hard pressure on all sides of the head at once: they were followed by copious sweats. In the last week of life, the patient was scarcely able to lie down; if he did, he was sure to feel worse; and he walked about his room all night. There were from eight to twelve attacks every day, of the same kind, as described above, the sweat being followed by a vehement shaking and chilliness. In one of these attacks the patient died.

Post-mortem examination, Dec. 9th, seventeen hours after death.—Galea aponeurotica pale, bloodless; cranium dense, particularly so the frontal and parietal bones. Both of them are very concave, extending very far, the one forwards, the other backwards. The region of the large fontanel, where the coronal and sagittal sutures meet, depressed; the sutures are visible only at this meeting point; everywhere else they have entirely disappeared. The form of the cranium narrow and long (dolichocephalus, Virchow), diploë very much developed, *impressiones digitatæ* very deep and large, particularly so on the inside of the os frontis and the lower part of the os occipitis. The cranial impressions of the sinus, sulci venosi, uncommonly deep. Foramina emissaria are not found at all. The margins of the impressiones digitatæ, the juga cerebralia, uncommonly sharp pointed, particularly so on the basis cranii. Sella turcica of an extraordinary size and with sharp margins. The whole inside of the cranium and the dura mater bloodless, less so the arachnoidea, without being, however, hyperæmic. The brain stiff, tough, hard; gyri hard, extremely flat all over the cerebral surface; the inner and upper edge of both hemispheres very sharp, their inner surface very flat and hard. The grey and white substances contain very little blood. The white substance looks discolored, showing a dirty greyish tint. Thin slices cut from the hemispheres are tough, may be suspended by one end without breaking or even lengthening. The lateral ventricles very narrow, without any serum; the third and fourth ventricles normal but narrow. The brain throughout of the same density and toughness as its surface; pons Varolii and medulla oblongata even more so. No disproportion, as to size, between the grey and white substances.

This is, undoubtedly, an evident and very instructing case of *sclerosis cerebri*. The history of the deceased's cranium and cerebrum, as may be concluded from the results of this post-mortem examination, is briefly this: The abnormal state of the cranium has been the first false step in the general development, the

large fontanel and the cranial junctures closing too early. This is proved to be a fact by the upper frontal and parietal region, by the adjustment which has evidently taken place in the frontal and occipital directions, and by the dolichocephalic shape of the cranium. From this time, that is from the third or fourth quarter of the first year of life, dates the disproportion between skull and brain. It is probable that the deceased, when a child, was so fortunate as to escape difficult dentition, and severe symptoms of irritation produced thereby; if he had not been so, there is a great probability that he would have died in early childhood. Deceased is said to have been intelligent when attending school. This is not uncommon in cases where the above-mentioned disproportion advances slowly and has not been complicated with irritative symptoms. As long as life continued there was a constant antagonism between cranium and cerebrum. It is not improbable also, that in the last years of life renewed depositions of calcareous matter have taken place, more so, probably, on the basis, than on any other part of the cranium. The frequent attacks to which the patient was subjected, exhausted, at length, the power of resistance, which is limited as well in the nervous, as in every other system of the organism.

Real hypertrophy of the cerebral substance is out of question. I have remarked in another place, that cerebral hypertrophy affects but the white substance, not the grey, and the large hemispheres only, not the cerebellum, and cannot but produce a disproportion between the two. No such disproportion exists in our case. Besides, the shape of the cranium and the other facts alluded to are against such an assumption.

After the foregoing exposition, it appears that the prognosis of the kind of cerebral sclerosis described is highly unfavorable. According to the present symptoms in each case, whether a distinct and perfect diagnosis be made or not, either a stimulant or an antiphlogistic treatment will seem to be indicated. The former will aggravate the condition of the patient in every case, which is combined with congestion of the brain or its membranes, while theoretically it should be adopted only where the main symptoms are those of perfect depression. The debilitating course of treatment may be able, at once with the diminution of the dimensions of the body in general, to remove, for a while, the disproportion between the brain and the cranium. Taken theoretically, all this is right and promising of success. But we cannot continue to debilitate without killing the patient by exhaustion or by meningeal exudation, which so very frequently is the result of general and continued inanition.

Finally, I wish to state emphatically, that I do not assert that every child whose fontanel is ossified prematurely, must and will fall sick and perish with cerebral symptoms at an early age. For the premature ossification of the fontanel and sutures need not, of itself, absolutely and always produce congestion of the brain or its membranes, which often becomes the occasional and last cause of death. But what I assert and wish to be understood to say is this, that every child, whose fontanel and cranial junctures have been prematurely closed, and who falls sick with symptoms of cerebral irritation or depression, *is predestined to certain death* at an early age. I therein fully agree with Condie,* who has only a few, but striking, words on this subject, that "when the growth of the cranium ceases, while that of the brain continues, the morbid phenomena resulting from the compression of the brain, which invariably results, may certainly be, to a certain extent, abated, the comfort of the patient increased, and life prolonged by a proper hygienic course of treatment—but all hopes of effecting a cure must be abandoned."

In giving, therefore, the preceding exposition, I was well aware that I should be unable to advance in the least therapeutics; my only desire was to call the attention of the medical practitioner to a subject of the highest etiological, diagnostic and prognostic interest.

ART. V.—*The Ioduretted Saline Waters at St. Catharines,* C. W. By THEOPHILUS MACK, M.D.

NEAR the debouchment of the Welland Canal into Lake Ontario, and upon the right bank of a rivulet called formerly "The Twelve Mile Creek," but now forming the bed of this portion of the canal, a country town, named "St. Catherines," has been built in Western Canada. It is situated most conveniently for visitors, being upon the line of the Great Western Railway, about ten miles from the Niagara River Suspension Bridge, and twelve miles from the Falls of Niagara; it is also in direct communication with Toronto, the capital of Canada, per steamboat, and a four mile railway, which accomplish the transit in about three hours.

The town contains about 7,000 inhabitants, and is most picturesque in its position, being flanked by the chain of heights which run continuous with the ridge from Lockport, N. Y.,

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* F. D. CONDIE: *A Practical Treatise on the Diseases of Children.* Fourth ed., 1854, p. 388.

springing from the bank of the Niagara at the cataract, and Queenston on this side, and running around the head of Lake Ontario to lose themselves far in the interior. In the neighborhood of St. Catherines, they form one side of an amphitheatre, covered with trees and cultivated fields, presenting much scenic beauty. These heights are supposed to mark the coast of a former vast inland sea, and the valley intervening between them and the lake shore is remarkably fruitful, and presents a pleasing and animated picture to the eye of the tourist. The air is pure and soft, the health of the inhabitants above the average of the denizens of western New York and Canada, the country above the highlands abounding in ever varying scenery of hill and dale, in many places full of romantic beauty, while the mouth of the Twelve Mile Creek widens gradually into a small loch, studded with islets, and rivalling in charms one of the prettiest of the far-famed Killarney Lakes.

This easiness of access, mildness and salubrity of climate, pleasing nature of the environs, and undoubted efficacy of the waters in alleviating and removing a vast number of the diseases of a chronic character, to the treatment of which they have been applied, render the Spa at this spot an object of especial interest to the profession; more particularly from the fact that an annually increasing number of visitors and invalids resort hither during the summer months to bathe in and drink the waters, as well as to enjoy the calm country scene and air which tend so much to the convalescence of the citizen.

The *salt-lick*, where the artesian boring has been effected for the well, had long enjoyed a high reputation among the earlier settlers, and as usual a wide range of application (and its being so long resorted to shows that occasionally it must have proved successful), when a company was formed to manufacture salt from the well, which for that purpose was sunk to the depth of about six hundred feet; this speculation did not pay, from the deliquescent nature of the salt, owing to the large proportion of chloride of calcium which a reference to the accompanying analysis will show to be very great, much to the mystification of the worthy gentlemen engaged in the enterprise, who could not comprehend the reason that a water so intensely saline to the taste, should yield so small a percentage of the chloride for which they sought. The manufacture was abandoned, and the property having changed hands, a rude bathing establishment was opened, and the mother water being boiled down and bottled, was sold far and wide as a panacea.

About five years ago the present proprietor purchased the grounds and well, and immediately commenced fitting up

a bathing-house, and the erection of a splendid hotel, which were first thrown open to the public in the summer of 1855. The success has so far been very flattering, and the effects of the water being under my own observation, I am enabled to place before my professional confrères the following facts relative to its action and use.

Before doing so, I will take the liberty of submitting the following analysis, the first qualitative effected by myself, the second quantitative, from the able hands of Professor Croft, of the Toronto University.

QUALITATIVE ANALYSIS.—Taste intensely saline, giving the smell of sea-water. Neutral to test paper. Sp. gr. 1036. Temp. 60° ; temp. of air 67° Fahr.

Results of Analysis.

Chloride of Sodium.
" Calcium.
" Magnesium.
Sulphate of Lime.
" Soda.
Iodide of Magnesium.
Bromide of Magnesium.
Carbonic Acid.
Iron Protoxide.
Alumina.
Silica.
Organic Matter.

QUANTITATIVE ANALYSIS, BY PROF. HENRY CROFT.

	In 1,000.	In pint, 7,680 grs.
Sulphate of Lime, ...	2.1923	16.8368
Chloride of Calcium, ...	14.8544	114.0818
" Magnesium, ...	3.3977	26.0944
Iodide of Magnesium, ...	0.0042	0.0322
Bromide of Magnesium, a trace.		
Chloride of Potassium, ...	0.3555	2.7302
" Sodium, ...	29.8034	228.8901
" Ammonium, } a trace.		
Silicic Acid, }	50.6075	388.6655
Loss,	1.0670	
Toronto, July 25, 1853.	51.6745	

Prof. Chilton of New York announced the following as his analysis of the mother water, or bittern, after crystallization of the salt.

Sp. gr. at 60° Fahr. Quantity examined, one pint.

	Grains.
Cloride of Calcium,	2,950.40
" Magnesium,	1,289.76
" Sodium,	781.36
Proto-Chloride of Iron,	13.76
Sulphate of Lime,	16.32
Carb. of Lime and Magnesia,	2.08
Bromide of Magnesium,	2.01
Iodide of Magnesium,	2.11
Silica and Alumina,	2.47
Total grs.	5,060.27

The waters are by no means identical with sea-water, as the analysis will show at once; a resemblance to the waters of the "Dead Sea," as reported by Lieut. Lynch, may be traced, but in taste, appearance, and physiological effects they differ very widely from the waters of any ocean. An examination into the nature of saline constituents as given in the foregoing lists, will at once lead us to expect that a very marked action upon the animal economy must be the result of their prolonged use, and that such is the fact, I think I am now in a position to prove.

It is scarcely possible at the present day to discredit or doubt the influence of mineral waters upon the human system. In general readily absorbed and conveyed by the circulation to every viscus or structure, they must exercise a very manifest influence upon the functions of every organ and tissue, and a salutary effect in a great variety of disorders, and as our every-day experience teaches us that solutions of medicinal substances effected by the cunning hand of nature produce actions upon the organism which we in vain attempt to produce by the same agents combined by the art of the chemist, the vast majority of the medical world daily recommend to their patients the use of some of the mineral springs, now everywhere seeking a modicum of public patronage.

If chemical analysis had not declared the composition of the "St. Catherine's Well," and were the effects of bromine and iodine, not yet fully established, the recorded results of experience in the use of this kind of water from the study of German Spas, during more than half a century, almost identical in nature, have been sufficiently conclusive to silence discussion as to their therapeutic value. This field of observation, constituting a mass of clinical experience utterly impossible to derive from the use of any other therapeutic agents, has demonstrated that Spas of this character generally operate a change in the state of the stomach when this organ is suffering from want of tone, and from many neuropathic. They

produce a resolvent action in engorgements or hypertrophies, or a tonic action in many cases of excessive secretion from mucous surfaces. In strumous affections the improvement from this class of waters is prompt and *prononcé*, neuralgiæ, and maladies usually termed asthenic, are generally improved while the anæmia of chlorosis is quickly removed, giving early indications in the lips and cheeks of such patients, of a more perfect pneumatosis. The saline nature of the Salins, in the eastern portion of the Jura of France, bordering on the Swiss frontiers, as analyzed by Mr. Desfosses, are found to be composed of a very similar assemblage of ingredients, viz. the chlorides and bromides, and are confidently extolled by M. Carrière for their beneficial effects in the lymphatic diathesis, in chloro-anæmia, in gastralgia, enteralgia, muscular asthenia, chronic rheumatism, general paralysis, rickets, tumors, ulcerations, and caries of a scrofulous nature, white swelling, skin diseases, and "vice syphilitique." At this place as at St. Catherines, the salt has been separated, and the concentrated water administered with great success.

The Kreuznach mother water is very similar in composition and remarkably alike in medicinal effects. Professor Osann's analysis, shows sixteen ounces of the *original* water to contain the following mineral constituents, and the remarkable resemblance to the water of the artesian well at this place is quite striking:

Chloride of Sodium,	72,922
" Potassium,	0,971
" Lithium,	0,075
" Calcium,	13,276
" Magnesium,	0,251
Bromide of Sodium,	0,307
Iodide of Sodium	0,003
Carbonate of Magnesia,	1,351
" Baryta,	0,299
" Strontia,	0,683
" Iron,	0,199
" Manganese,	0,009
Alumina,	0,021
Silica,	0,313

This is as near an approximation to identity as the geological formation of the two regions can allow. Sixteen ounces of the mother ley of Kreuznach contained 2,625.75 grains of solid matter distributed in the following manner:

Chloride of Calcium,.....	1,577.71
Bromide of Calcium, ...	388.72
" Potassium, ...	92.82
Chloride of Magnesium, ...	38.44
Bromide of Sodium,.....	154.10
Chloride of Sodium,.....	60.34
" Potassium, ...	17.30
Alumina and suboxide of Iron,.....	35.66
Crenic and apocrenic acid and two peculiar resinous matters with traces of iodine,.	216.16
Water of Crystallization and loss,.....	44.50
	2,625.75

The waters here have a large quantity of the iodides, and I have reason to believe that the bromides are estimated too low in Dr. Chilton's analysis.

The efficacy of the water, and especially the mother waters of Kreuznach, in uterine tumors and hypertrophies seems to be very generally recognized.

First among the affections benefited by the use of the saline waters of St. Catherines, I will place rheumatism, in its chronic form and in the stage of convalescence from the acute form of that disease. During the past and present bathing season, more than two hundred cases of chronic rheumatism in its protean forms have presented themselves here for relief, and I can aver that out of that number, at least one hundred and eighty went away cured or highly gratified with the improvement consequent upon their sojourn.

Gout, in all its stages, is the next in the category of human ills to which the internal uses of the mother water, together with the external use of the natural water, seemed to be most happily adapted. To my knowledge, about sixteen invalids of this description have visited the Spas, and with one solitary exception have been improved. Scrofulous ulcerations, affections of the joints and lymphatics have all been relieved; non-malignant hypertrophies, or indurations, are rapidly softened and removed; among these, enlargements of the uterine neck, ovaries and mammæ are decidedly altered, and absorption promoted; great alleviation is always experienced in the dorsal, perineal, and ovarian pains, so constantly attendant upon uterine disease, and simple leucorrhœa is frequently cured by a few baths. In hepatic torpor the water acts well, and as I believe very few mineral waters in America equal it in its diuretic action; it is invariably of use in lithiasis. In oxaluria the hot bath in conjunction with mineral acids ranks high among remedies. In psoriasis, when the eruption

is not active, the baths appear beneficial. In certain forms of indigestion the chloride of calcium acts extremely well, and in some cases of obstinate constipation, the free internal use of the water and the hot bath have proved completely successful.*

I have written these few crude observations *currente calamo*, and I trust they will meet the end for which I stated at first I wrote this article for this Journal, viz., to keep the profession *au courant* as to the cases likely to derive benefit from a visit to St. Catherines.

ART. VI.—*Report of the Proceedings of the Medical Societies of New York.*

NEW YORK ACADEMY OF MEDICINE.

REGULAR MEETING, DEC. 2, 1857, DR. MOTT, *President.*

PUERPERAL FEVER.

(*Continued from page* 163, vol. iii. 3*d Series.*)

DR. A. CLARK said:—That as much time had elapsed since he was first honored with the attention of the Academy on this subject, he would take the liberty of recapitulating the positions he had taken in regard to the nature of puerperal fever. He had expressed his concurrence in the views of those who believe the disease to be contagious, and had spent a little time in considering the different doctrines relating to the means by which the contagion is conveyed from one person to another. He had stated that in his belief the disease is composed of two elements, a fever and an inflammation. In this respect, it resembles the epidemic dysentery, the epidemic erysipelas, or small pox. He had already stated that in the epidemic erysipelas which prevailed in New England, and in the western States, from seventeen to ten years ago, these two elements were as clearly distinct, in the time of their development, as they are in small pox. A febrile movement, lasting a variable time, attended by swelling of tonsils, and of the superficial and deep-seated glands of the neck, preceded the grave inflammatory lesion; and when this latter made its appearance, one, two, or three days after the fever commenced, it was an erysipelas of the head and face, of the lower extremities, the body, side, or arm; or it was a pleurisy without any external inflammation, or a peritonitis, or indeed, almost any internal inflammation. In lying-in women, and those in the puerperal state, it assumed the form of puerperal fever. In these various modes of development, it seemed as if the same poison was demonstrating its morbific power by lighting up a fever first, and kindling an inflammation afterwards, the double effect of one agent. He had expressed his belief that the fever of the puerperal disease was just as certainly

* Several cases of chronic dysentery and diarrhœa have derived advantageous results; in one case of supposed ulceration of colon this bath effected a cure. In malarious toxæmia the waters are of excellent effect.

followed by inflammation, as the fever of small pox is followed by an eruption, complete or incomplete ; and as the fever of small pox never endangers life till the eruption, or some modification of it occurs, so he believed the puerperal disease is never fatal, but by the aid of its inflammatory element. These comparisons, however, illustrate nothing more than the compound nature of this fever, the succession in the two leading elements follows a very different law ; for while small pox fever requires two days to reach its eruptive stage, and epidemic erysipelas one to three days to reach its inflammation, the puerperal fever, like epidemic dysentery is followed promptly by its local lesion, commonly in a few hours, often in one. He believed in the communicable character of the disease, and this independent of other reasons would almost compel him to believe in its febrile nature. He believed in the inflammatory lesions, because their constancy is testified to by every accredited observer, except in a few rare instances.

These rare instances were the cases, which, in the belief of Simpson, Gooch, and others, were without lesion of any kind—a simple fever, the poison of which overwhelmed the vital powers. It was his object, on a former occasion, to show that these cases were no exceptions to the general rule, but that they were really marked by inflammation, like the others, but that the inflammation was one that had escaped detection, that it was an endometritis, and that the inflammation affecting the inner surface of the uterus, involved the open or valvular mouths of the uterine veins, and might produce purulent contamination of the system while no pus was found in the veins themselves after death. The evidence of this was in the inflammatory exudation on the inside surface of the uterus ; the redness of the uterine structure, penetrating a minute distance from within outward ; the symptoms of pyæmia, and the discovery of pus in distant organs. To present this idea was the chief object of his former remarks ; and to give it distinctness, he had referred to and recognized the then commonly described inflammatory lesions, viz. the peritonitis, the purulent phlebitis in the uterine sinuses, and the purulent inflammation of the uterine lymphatics. These, together with endometritis he had stated were the primary *inflammatory* lesions, and that there were other organs subject to inflammations, in a subordinate and secondary degree.*

These were some of the views that he had presented at a former meeting, and he recapitulated them now to correct any erroneous impressions which might be formed from the condensed report of his remarks published in the medical Journals.

He could hardly open this subject for the further exposition of his views, without first noticing some of the statements made by Dr. Barker when the topic was last entertained by the Academy.

Dr. Barker urged that puerperal fever is a zymotic disease. So perhaps it may be, but Dr. Clark did not like the term, and was not in

* In making this classification of the inflammations, Dr. Clark did not mean to say that they were the earliest evidence of the morbid impression made upon the system ; he meant to state simply, that among the inflammatory changes, those in the peritoneum and uterus were first in time and importance.

the habit of using it, because it is vague and of uncertain import. As commonly applied, it means, he said, all endemic, epidemic, and contagious diseases ; and in this latitude of usage it had been made to embrace the most dissimilar affections. He had looked into the annual report of mortality in this city for the year 1842, prepared by our learned and industrious fellow-laborer, Dr. Griscom, much the best report that has ever issued from our City Inspector's office, and he finds there that the diseases usually called zymotic, are the miasmatic, typhus, and typhoid fevers ; erysipelas, small pox, scarlet fever, and measles, thrush, cholera infantum, croup, dysentery, diarrhœa, hooping cough, influenza, and syphilis. He finds that our Boston friends, in preparing the valuable mortuary reports of Massachusetts, use the term, and spread it over precisely the same ground ; while puerperal fever is carried far off into another section, and appears among the diseases of the organs of generation. This he discovers is the general usage of those who are attached to the word. By this very breadth of meaning, the term becomes vague and uncertain, and therefore objectionable. Should there be a disposition to use it in a stricter and narrower sense, as applicable to those diseases which reproduce the poison which causes them—in other words, strictly contagious diseases—in respect to the old idea that these diseases implied a fermentive process within the system, there would probably be less objection to the term, though even then it should be admitted into the medical language as a figure of speech, and in deference to the fathers. If the term as used by the gentleman means simply a contagious disease, Dr. Clark was ready to subscribe to his opinion, but for the sake of precision he was compelled to prefer the words, contagious and communicable, to zymotic.

Dr. Barker had taken the occasion, he said, to speak somewhat disparagingly of the study of pathological anatomy, as if it limited our view of disease, and taught us to disregard its general history. To this Dr. Clark would reply, by pointing to what pathological anatomy had done, and the rank which pathological anatomists hold in our profession. Nobody could doubt that the immense improvements in medical diagnosis and practice, which distinguished the present century from all that had gone before it, the discovery of new diseases, and the advantageous changes in the treatment of affections long known, were to be set down to the account of this branch of study, more than to that of all others put together. New York physicians had gained the reputation of excelling their brethren in most other cities in the art of diagnosis. If they deserved this reputation, it could be attributed to nothing so much as to the general cultivation of pathological anatomy, and to the reflection which that study suggests. The Pathological Society, with its profusion of means, and by its calm deliberations, and its constant reasonings from morbid appearances in the dead to symptoms in the living, was a constantly recurring lesson to teach the profession not only what this study is worth, but to inform them what phenomena in life are not illustrated by the revelations of the scalpel, and also to keep alive a love for this pursuit by a demonstration of its

advantages. In this respect it is far the most useful of our public societies, and who will venture to say that it has narrowed our view of diseased action, or turned us away from the proper consideration of the morbid agencies which work unseen, but fatally, leaving few intelligible footprints?

Morbid anatomy contemplates what it cannot demonstrate to the eye, no less than the obvious changes of structure.

If we look through the catalogue of distinguished names that grace our profession in the present age, we shall find that with scarcely a single exception they are the names of pathological anatomists, and that the foundation of their distinction is laid on this study. Brodie, and Velpeau, and Nelaton, Andral, Chomel, Louis and Trousseau, had been nothing if their intelligence and zeal had not induced them to follow their fatal cases to the dead-house; and certainly it will not be said that these men have contracted their perceptions, and have been led to disregard any recognizable morbid agency by these pursuits. On the contrary, any just study of men must compel us to the conclusion that the same zeal which urges to the laborious use of the scalpel, is the parent equally of that industry which gives the largest and widest views of disease in all its relations.

But we are told that an appeal to the *post mortem* appearances can hardly be allowed, because the observer is likely to come with his mind preoccupied with the idea that he must find some change of structure to show for every disease. This at least seems a fair construction of the objection taken, that "pathological anatomy has led to exclusive solidism in medical doctrines." Is this really so? The present century illustrates the influence of pathological anatomy on professional opinions. Post mortem examinations were rarely obtained, or even asked for, till the time of the French revolution. Fifty years ago the doctrines of Cullen, or rather a solidism more exclusive than his, possessed the whole medical mind. Humoralism could hardly be said to have had an advocate. Even as late as 1830, Cullen reigned. In 1835 he (Dr. Clark) was born into the profession, a solidist. Almost all the senior and middle aged men, who now complimented him with their attention, were baptized into the same faith. And where are the exclusive solidists to-day? The very phrase is obsolete, or if not, is known only to mark a period in the history of medicine. Every man's opinion has undergone a change; and pathological anatomy has effected this change. Aided by chemistry and the microscope, it has shown us, both by its positive and its negative results, that there are diseased actions which leave no marks in the solids, or only such are secondary and subordinate. When every physician, at all familiar with post mortem examinations, has found many of the solidist opinions in which he was educated gradually melting away; when such men as Carswell, Andral, and Cruvelhier,* take the lead in investigations which show the blood

* Cruveilhier (*Anat. Path.* Liv. xi. p. 3) discussing this very point, viz., how purulent contamination affects the system, says, "The solidism of the school of Pinel was mute before such facts;" and adds, that the "*sympathy*" of Bichat was "a metaphor, a felicitous word, which took the place of a fact."

to be the seat of the gravest changes, and so far as we can see primary changes, there is little ground for suspecting pathological anatomy of exclusive solidism.

But these are, after all, little more than side issues. The statement of gravest significance, and if it be supported, one which closes the argument on the real question at issue, is that the "lesions are often not sufficient to influence the progress of the disease, or to explain the cause of death." This statement, unsupported as it is by facts, is nothing more nor less than begging the question. The opinion which follows in support of this assertion, that "the most malignant form of this disease, that which proves fatal in a few hours, offers the *fewest and least striking* structural lesions," may be true enough; for intense pyæmia requires little aid to destroy life, and certainly it is not the most striking among the manifestations of morbid anatomy. Two questions are suggested by these statements: 1st—What is really the shortest time in which the most malignant form of puerperal fever destroys life; and, 2d—Whether this shortest time is not long enough for endometritis to produce fatal contamination of the blood? or, in other words, in what time purulent infection can overwhelm the vital forces?

Dr. Clark had not, as he said, made any extended research to ascertain the shortest duration of puerperal fever. He had only looked over his own cases, and those reported by the late Dr. Vaché. These latter are cases which occurred in Bellevue Hospital in 1840, when the form of the disease was the most malignant, and the fatality among those attacked greater, than in any other visitation of the fever, since the lying-in-wards were opened. The shortest case of which he had any notes was fatal in 30 hours. The six shortest of Dr. Vaché's cases lived 33, 36, 42, 44, 44, and 48 hours respectively, and the lesions noted in these several cases were as follows:

Case. 5.—Duration, 33 hours. All the peritoneum injected, that of the small intestines highly so; mucous lining of the small intestines much softened and inflamed, a portion of that of the stomach inflamed; a pint of straw-colored serum in peritoneal cavity; interior of uterus appeared natural.

Case. 8.—Duration, 36 hours. Peritoneum decidedly injected, containing a pint of dirty, cream-colored, puriform fluid, with shreds of lymph; mucous membrane of stomach and intestines considerably inflamed; *the inner surface of uterus covered with a shreddy secretion of the color of gangrenous tissue, and apparently saturated with pus.*

Case 19.—Duration, 42 hours. Peritoneum somewhat injected, containing a quantity of reddish brown fluid, but no lymph; half an ounce of pus between the uterus and bladder; uterus lined with a *dark chocolate-colored stringy secretion,* which being scraped off, left *the inner surface somewhat injected.*

Case. 12.—Duration, 44 hours. Some lymph on the peritoneum, half a pint of brown serum containing lymph flocculi, in its cavity; inner surface of uterus covered by *a fœtid stringy matter, intermingled here and there with a grey, ash-colored deposit.*

Case 1.—Duration, 44 hours. Peritoneum injected, a pint of sero-purulent fluid in its cavity, considerable lymph on its surface; inner surface of uterus covered by *a light red secretion, with an occasional black patch.*

Case 13.—Duration, 48 hours. Lymph on several portions of the peritoneum; a little pure serum in its cavity; right ovary large and contained some small abscesses; inner surface of uterus lined with *a pink-colored matter* of the appearance of healthy lochial discharge; broad ligaments of right side thickened and puffed out by deposition of lymph.

It is proper to state here that Dr. Clark saw all the cases reported by Dr. Vaché as they occurred after the 23d of February, up to the time the lying-in-women were sent to the island; and at Dr. Vaché's request he took charge of such patients as were left in the infected wards, when new wards were opened. He also witnessed and recorded all the post-mortem examinations which were made at Bellevue after the above date. Case 4, and all from 6 to 18 he saw, and it was from his notes of the lesions that Dr. Vaché's reports were partly made up. When case 5 in the above list was examined, particular attention had not been paid to the inner surface of the uterus, and the report that this surface "appeared natural" cannot be taken as conclusive, especially since Dr. Vaché himself, as a rule, did not witness the dissection, for prudential reasons. It was case 8, in which the uterus presented an appearance altogether like that figured by Cruveilhier, Liv. iv. pl vi. fig. 2, that drew attention strongly to this surface, and it was carefully studied in all the cases which occurred afterwards.

Dr. Clark holds that "the light-red secretion" of case 1, the green shreddy gangrenous looking effusion of case 8, the "fœtid stringy matter" of case 12, the "chocolate-colored stringy secretion" of case 19, and the "pink-colored matter" of case 13, all indicate a morbid state of the inner surface of the uterus, and that all these "matters" and "secretions" are the fibrinous or purulent products of inflammation, colored variously by the blood in the uterus. The natural appearance of this uterine surface for some days after delivery, is in his conviction that which is given it by adherent blood, coagulated in shreds or small masses, and by the watery secretion which is effused to wash away this blood; the prevailing color being that of dark, coagulated blood, for at least two or three days.* As to Dr. Vaché's suggestion, that the

* M. Cruveilhier (*Anat. Path.* Liv. xiii., p. 2) expresses the opinion that purulent effusion is in general a part of the process by which the inner surface of the uterus becomes covered again with its lining membrane. He regards the lochia as a form of pus in most cases, and thinks that non-purulent lochia are the exception. He does not, however, regard the earlier lochia as having this character. It is possible that the analogy of a healing ulcer may have led him astray. With our improved means of determining this point, the lochia should be investigated anew. It has been stated in an earlier part of this discussion, that in the few cases examined of persons dying of puerperal convulsions, and other non-febrile accidents of labor, pus was not found in the uterus, and that in a portion of the cases of actual endometritis the product of the inflammatory action on the free surface is not pus, but lymph. It is possible, then, to say the least, that this distinguished observer

"pink-colored matter," in case 13, was probably healthy lochial discharge, had he seen it himself he would hardly have entertained this idea. Dr. Clark's notes on this case are full, and having been made at the time of the autopsy he thinks they can be relied on. "The inner surface of the uterus was covered by a thin flocculent matter which could be easily removed. This appeared to be lymph colored by a little blood. There were a few shreds of lymph lying unattached in the neck. The odor was not very offensive." "Several vessels of the left ovary contained each, instead of blood, a drop of what appeared to be pus." Purulent contamination in this case, then, may have had a double origin. Dr. Clark adds to these, one

Case.—Duration, 30 hours. Peritoneum injected, most so over the uterus and intestines; about a pint of dirty orange-yellow, sero-purulent matter, containing a few flocculi of lymph in the cavity; inner surface of uterus covered by a dirty pink-colored and yellowish white exudation which appeared to be fibrine.

In all these *short* cases there was evidence of inflammatory lesion of the peritoneum; in all but one there was a morbid exudation on the inner surface of the uterus, and in this one Dr. Clark was informed by those who made the dissection that the inner surface of the organ was not particularly inspected.* There may be cases on record of shorter duration than these. But it is of little importance whether there are, or are not; for it was claimed when these views were first presented, that this internal inflammation except in the most striking

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may have erred. But if a more careful investigation should confirm his views, it would only touch one of the supposed evidences of endometritis, and not the fact of its existence or its relations to the symptoms of puerperal fever. The reparative process, though pyogenic, has no analogies in its *constitutional effects* with the inflammatory; and it appears from Sedillot's experiments that a certain moderate quantity of well-conditioned pus may really enter the circulation and yet produce no sensible effects.

* Cruveilhier, *Anat. Path.*, Liv. viii., pl. i. ii. iii., p. 11, reports a case of puerperal fever (typhus puerperal) which was fatal in fifteen hours after delivery. The peritoneum contained a large quantity of white pus, such as is discharged from a phlegmonous abscess. The lymphatics of the uterus contained pus. There was dark slate-colored softening of the left lung. In this case M. Cruveilhier thinks the peritonitis preceded the delivery, as the woman had had abdominal pains and fever for five days.

On p. 10 he records a case fatal in *twenty-four hours*, the time of the attack being well marked and after delivery. The peritoneal cavity contained serum slightly bloody, and between the uterus and rectum pus. The sub-peritoneal cellular tissue was infiltrated with pus on the colon, along the right ovarian vein, in the broad ligaments (sero-purulent matter), on the neck of the uterus, and part of the bladder, etc. Uterine lymphatics full of pus; left ovary enlarged and softened.

In another case (p. 10) the disease was fatal in *forty-eight hours*; there was flocculent serosity in the peritoneal cavity; pus was infiltrated into the sub-peritoneal cellular tissue of the left iliac fossa; along the left ovarian vein to the kidney; around the neck of the uterus; in the walls of the vagina; and filled the lymphatics of the sides of the uterus

In this series of cases the shortest was fatal in 24 hours. Pus was found in the uterine lymphatics in all, and in all there was peritonitis. The inner surface of the uterus does not appear to have attracted attention.

cases had been overlooked. The appeal to the past, then, cannot be admitted into the argument. Future observations, made in view of the appearances here described, must decide the question, whether there is or is not a puerperal fever without some inflammatory lesion, peritoneal, uterine, or intra-uterine.

Still it will not be a loss of time, perhaps, to inquire a little farther into the probable effects of pus, laudable and ill-conditioned, mingled with the circulating blood. Sedillot, in his valuable treatise on "Purulent Infection or Pyæmia," has fixed the period in which this contamination from ordinary causes will prove fatal, at four to eight days; admitting, at the same time, the *pyoèmiées foudroyantes*, in which a large quantity of pus penetrates the circulation rapidly, as from an abscess opening into vena cava or portal vein, in which death will be determined in a few hours (p. 482). He recognizes, also, a grave condition, indeed incurable poisoning, when pus is mingled with the blood, though the quantity be less considerable, by continual additions (p. 483); and he expressly denies that in the rapidly fatal cases, there is any formation of metastatic abscesses. In nearly all the cases he reports of this accident in man, these abscesses were found after death; but when pus was injected into the veins of dogs, *if the quantity was large*, or if he injected the *serum of ill conditioned* pus, death occurred without such productions. His experiments also show that in the dog, at least, moderate purulent infection may produce no disastrous effects; and that in larger quantity, pus in the circulation does not always produce fatal poisoning.

These experiments are sufficiently instructive, in their bearings on several aspects of this question, to authorize a particular reference to some of them. Thus in

Expts. 1 *and* 2, M. Sedillot injected laudable pus, about 60 grains, the dogs weighing 14 and 16 lbs. troy, and it produced no sensible effect.

Expts. 3 *and* 4.—The same quantity, the dogs of the same size—for a short time yawning; pendiculations, chills, refusal of food; and in one (a little of the pus being from a bubo), alvine evacuations; but in both prompt recovery.

Expts. 5 *and* 6.—Dog weighing 15 lbs., 225 grains of laudable pus; dog 32 lbs., 320 grains. Hurried respiration, thirst, refusal of food, disposed to be alone, lying down and unwilling or unable to rise, after some days extreme emaciation: recovery.

Expt. 7.—Dog 17 lbs., 120 grains of fœtid pus. Animal gravely ill; very feeble; intense chills, panting and difficult respiration. After ten days began to recover.

Expt. 15.—Dog 10½ lbs., 120 grains of pus, greenish and fœtid, from a phegmon in the foot; in ten minutes animal supported himself against the wall, then sank down upon the earth, chills, hurried respiration; cries; *death in one hour.*

Expt. 16.—Dog 17 lbs., 60 grains of pus, from a venereal abscess of the scrotum; feebleness, difficult respiration, chills, horripulations, alvine evacuations, semi-paralysis of the posterior extremities: *death in one hour.*

Expt. 18.—Dog of medium size, 375 grains of well-conditioned pus; extremely feeble; stupid; when urged to walk, staggering, and falling frequently; frequent respiration; violent chills; alvine evacuations; tongue pendent; eye brilliant; later, respiration slow; then difficult, then raleuse; *death in four hours.*

Expt. 20.—Dog 27 lbs., 105 grains of pus from a gangrenous abscess in the muscles of the neck. Animal soon sunk to the ground; alvine evacuation; respiration accelerated, panting; attempts to vomit; neither ate or drank; *death in five hours.*

Expt. 21.—An Alsacian dog, 90 grains of the same pus; anhelation; diarrhœa; refusal to eat or drink; *death in eight hours.*

Expt. 27.—Dog 14 lbs., 60 grains of pus from an abscess in the thigh three weeks open; violent chill; feebleness of posterior extremities; refusal of food for eight days, and of water for four; escape from the house, choosing the very cold air outside; *death in eight days.* All the internal organs healthy, but a gangrenous abscess in the right thigh.

Expts. 28, 29, 30, 31, 32, 33.—Successive injections of pus; all fatal.

Expt. 34.—Injection of 75 grains of the serum of filtered pus, repeated four times. Death on the fifth day, without metastatic abscesses; animal in good health till nineteen hours before death.

Expt. 37.—Dog 23 lbs., 150 grains of filtered serum from the pus of a carious bone of the leg; second and third injection; great feebleness; death on the third day, without metastatic abscess.

Expt. 38.—Dog 40 lbs.; injection of filtered serum of laudable pus 150 grains—no effect. The same serum on second day injected in the same quantity, no effect. Third day slightly fœtid, same quantity; animal feeble, raised himself with difficulty. Fourth day, two injections of 75 grains, now fœtid. Death eight hours after the last. No abscesses, but hard knots in the lungs.

Expt. 41.—Successive injections of the filtered serum of pus from empyema; suppurative phlebitis; metastatic abscesses; hæmathorax; death on the eighth day.

Expt. 42.—Injection of 2500 grains of serum filtered pus, the pus of a lumbar abscess—no effect.

Expt. 44.—Dog 10 lbs. Injection of 45 grains of the globules of pus from an abscess in the arm, drawn the same day and kept at zero. Death on the third day—refusal of food; thirst; vomitings; feebleness; prolonged chills; tremblings; inflammation of the left eyelid, and of the cornea; ecchymotic spots in the lungs, but no abscesses.

The import of these experiments, and their relation to the disease we are considering, hardly require comment, especially when it is remembered that the uterine cavity is open to the ready access of air; that when inflammation has been recognized on its inner surface, it has often been of a character most likely to furnish a septic agent; and that the veins of the uterus are, after parturition, so arranged as to receive, either directly or secondarily, such septic agent, healthy or degenerated pus, in an augmenting and consequently accumulative stream.

Farther on, Dr. Clark said he might have occasion to remark on one or two of the other positions taken by Dr. Barker. It was sufficient for the present to say that the only question of importance on which they differed was—whatever might be the poisonous influence which produces the disease; foul air of an ill-ventilated or over-crowded apartment; the contagious principle given off by the sick person; the contamination of erysipelas; or, septic poison from a dead body, operating on the peculiar susceptibilities of the puerperal state;—whether puerperal fever, however produced, is really ever fatal before inflammation of some sort is developed, or without the concurrent agency of such inflammation. The argument of Dr. Barker had not convinced him that the ground he had taken at an early stage of this discussion was not defensible; and he again submitted to the Academy, to be tested by their future, not by their past, experience, whether the form of puerperal fever, heretofore regarded as fatal without demonstrable lesion, is not *the fever* with *endometritis*, and consequent pyæmia or septico-pyæmia.

In turning to the treatment of puerperal fever, Dr. Clark said he was aware that he was expected to speak, not of the treatment in general, nor of the different modes of treatment adopted by physicians, but of the effects of opium. This would be the scope of his remarks, with only such additions as his observation had enabled him to make of the effects of veratrum viride and of one or two other agents. To show how his mind was led to rely on opium as a remedy in this disease, he would ask the indulgence of the Academy, while he recited the history of the exclusive opium treatment in simple and traumatic peritonitis.

The treatment of ordinary peritonitis, for which the graduates of the College of Physicians and Surgeons, and the pupils of the New York Hospital, have the sanction of those institutions, to as late a date as 1836, and probably till several years after that time, consists in bleeding, leeching, and the use of calomel and opium; the calomel, given with the view of affecting the system as promptly as possible, and the opium to retain the calomel, being given in grain and half grain doses. Indeed, these were the means relied on by nearly the whole profession. In 1841, however, visiting Woodstock, in Vermont, Dr. Clark met there Dr. B. R. Palmer and Dr. H. H. Childs, and he found that these gentlemen had become attached to Armstrong's method, as it is commonly called. He saw, with Dr. Palmer, patients treated in that way doing much better than on the more generally adopted plan. In the spring of 1841, '2 or '3, probably in one of the earlier years, talking of these cases, Dr. Clark suggested to Dr. Palmer that probably opium was the curative agent in peritonitis, and that the bleeding might be safely omitted, if the effects of the drug were steadily kept up. The next season, when they met, Dr. Clark was able to report an increased confidence in his suggestion, for he had tried opium alone, and had been successful. This statement he makes on the authority of Dr. Palmer, for in the lapse of years he had himself quite forgotten how the thought originated. From that time, neither he nor Dr. Palmer had bled a patient with this disease, and he remembers but one instance in his own

practice in which leeches have been used ; and Dr. Palmer is now in the habit of saying, that with this treatment, peritonitis is no more formidable than a pneumonia. Up to 1850, Dr. Clark had treated eight cases successfully. In that year he saw his first unsuccessful case. The subject of the disease was a gentleman of some distinction, seen with Drs. Bulkley and J. M. Smith. In that case, however, it is proper to add, the disease probably gained much force, under the mask of a diarrhœa, before its true nature was recognized. Since that time he has lost but two in private practice, one in the practice of Dr. Gilman, and one in that of Dr. McNulty. In the first of these, there were some grounds for suspecting perforation, and in the second that accident was demonstrated after death. In the hospital there has, perhaps, been one death from the same cause in that period.

It was not till he had tried the opium in puerperal peritonitis that he became aware that his experience was but a confirmation of earlier observations ; but it soothes his vanity somewhat, that among the many physicians here and elsewhere who talked about and adopted the treatment, there were none who, at that time, could enlighten his ignorance. The report of what Drs. Graves and Stokes had done, in the fifth volume of the Dublin Hospital Reports, had either not been seen by New York physicians, or had attracted but little attention, and had been forgotten. It is certain that the suggestions of Drs. Graves and Stokes were not adopted by the profession here, and, so far as is known, had not influenced the opinions of any practitioner in the city. In Dr. Graves's "Clinical Lectures," by Neligan (p. 244, vol. ii.), the following passage occurs : "The first case in which I used opium in peritonitis occurred in 1822, in the old Meath Hospital. It was that of a woman in whom the inflammation set in after the operation of tapping for dropsy. The case seemed so hopeless, and the sufferings of the patient so intense that I was induced to order opium for her in large doses. She also got wine. To my astonishment, she recovered. I afterwards published with Dr. Stokes our conjoined experience of the efficacy of this plan of treatment, in the fifth volume of the Dublin Hospital Reports." He adds, and the addition has a certain degree of significance : "The use of opium, in the form of peritonitis then described, is almost universally adopted," (that is, almost universally in Ireland). Dr. Graves, then, did not propose opium as a remedy for *peritonitis*, but for peritonitis *of a particular form.*

The following extracts from Armstrong's Lectures will explain his plan of using opium : 1. "The first and main remedy is blood-letting, carried to approaching syncope." 2. "As long as the tongue continues moist, opium with blood-letting may be considered a sovereign remedy." "As soon as the patient recovers from the syncope, give him, if an adult, three to five grains of opium." He goes on to say that if in four hours the pain returns, the bleeding should be repeated, and the patient should take two grains of opium, *with calomel;* and if two hours later there is still pain, he directs still another bleeding, and one and a half or two grains of opium, *with calomel.* "The opium," he says, "tends to arrest the secretions of the liver, but when combined

with calomel, it has not that effect. Whenever, therefore, you repeat the opium, give calomel with it." The estimation in which Dr. Armstrong holds opium is emphatically announced in the following citation: "If I were subject, etc., and were only allowed to have opium or blood-letting, I would choose opium, though I would prefer both together."

Thus it appears that Graves proposed the use of opium for a particular form of peritonitis only, and Armstrong used it only as an auxiliary, though regarding it as rather the more benevolent agent among those he had chosen. It is not improper to add that the latter author startles our confidence a little, by a somewhat braggart air, and by figures that appear to us very large. He says: "I have treated nearly *three hundred* cases, with a success far greater than I have had from any other plan; and I could defy all the physicians of this country to show any more successful practice." Dr. Watson, in his Lectures (Am. Ed., 1847, p. 737), referring to the use of opium in peritonitis, says that; "A pamphlet was published some years ago, by Mr. Bates of Sudbury, recording some striking cases of recovery from severe peritonitis, under large and frequent doses of opium, and a rigid adherence to the horizontal position." It is not stated whether bleeding was resorted to in those cases or not. But Dr. Watson is not convinced of the propriety of relying on opium, either by Mr. Bates's pamphlet, or by the cases of Drs. Graves and Stokes, which he reviews; for he says: "To sum up, then, *bleeding, and calomel, and opium* are to be resorted to for checking the inflammation." "The opium," he says, "allays pain, and perhaps relaxes spasm; *mercury tends to arrest the inflammatory action.*" Dr. Clark presented the facts in this form, to secure for the opium treatment all the importance to which such independent and concurring observations should fairly entitle it.

But the history is not yet concluded, for said Dr. Clark, if I may not claim for myself the priority of the discovery, by just so much as I esteem it useful, I am happy to be able still to claim it for my country. To you, sir [addressing the president], our acknowledgments are due for having preserved on record the fact that the late Dr. Wright Post, of this city used this *magnum donum Dei*, to combat inflammations, before either of the physicians, whose authority is now so often quoted. Dr. Post, it seems, used opium in large doses "*for its paralyzing influence over disease*" of an inflammatory character, as early as 1804, and for enteritis in 1810, perhaps considerably earlier; for he seems to have been familiar with its use at that date. This pamphlet was published in 1829, before I was myself a student of medicine, and I became indebted to Dr. Van Buren, two or three years ago, for my first opportunity of perusing it. It is entitled a "Biographical Memoir of Wright, Post, M.D., late Professor of Anatomy, etc., by Valentine Mott, M.D.," etc.; and contains a letter from Dr. F. G. King, addressed to the author, which details these facts. It is worthy of republication at this time, when the virtues of opium are undergoing renewed investigation.*

* See Dr. King's Letter to Dr. Mott.

The details of this opium treatment of peritonitis are so nearly identical with those of the same treatment applied to puerperal fever, that the management of the two diseases can be most conveniently spoken of together; and the hour being far advanced, it is better that both be postponed till another occasion. It is, perhaps, proper to say in closing, and in anticipation of what is to be said hereafter, that my confidence in the opium treatment of puerperal fever, with peritoneal complication, is in no degree shaken by accumulating experience, but is rather increased ; while its usefulness in that form of the disease which is attended by purulent infection, has not been demonstrated, at least, as an exclusive method.

NEW YORK, Feb. 5th, 1829.

MY DEAR SIR,

In reply to your inquiries as to the use of anodynes and opium by the late Dr. Post, I have to remark, that in conversation with him some two years past, relative to Dr. Armstrong's practice in inflammatory diseases, he told me that the use of opium, as recommended by that gentleman, (except in *larger doses*,) was corroborated by his own experience for a long series of years, and that to him it was by no means a novelty : for that in 1804, he was called to a child about three years of age, suffering under a violent pneumonic attack, accompanied by pain, cough, and febrile excitement. That he accordingly bled, blistered and evacuated the patient, afterwards placing him under the use of antimonials, but all without benefit. Matters proceeded from bad to worse, until the child, exhausted by constant cough and excessive restlessness, seemed nearly at the point of death. Under these circumstances, he determined to quiet all these irritating symptoms by a powerful anodyne, and accordingly exhibited 60 drops of laudanum. Two hours after, he was called to the child, then supposed by its parents to be dying. He found the features sunken, the surface covered with a cold clammy sweat, and secretions of an unpleasant appearance about the eyes and nostrils, but the pulse had diminished in frequency, and was more full ; the respiration was slower and everything indicated the full and desired action of the anodyne. The parents were astonished to hear the physician say that the child would soon be better. The next morning all untoward symptoms had subsided, and the child became rapidly convalescent and recovered.

This was his first trial of anodynes in such affections; his *experiment*, if you please ; but a few months afterwards, a similar case occurring, he immediately resorted to the anodyne ; depletion and evacuants having been premised, and with similar success, since which period he has generally continued that mode of practice ; latterly, however, substituting the Dover's powder in place of laudanum, in pneumonic attacks.

In 1810, he was called in consultation upon a gentleman in Jersey, suffering under enteritis. He found that he had been repeatedly bled, blistered and evacuated, but to no advantage ; the pain still continued acute ; the pulse was small, frequent and corded ; the skin dry and hot. Under these circumstances he suggested the propriety of exhib-

iting a powerful anodyne, in order to quiet all irritation, and give nature an opportunity of recovering herself. After a little hesitation on the part of the attending physician, it was finally determined to adopt the course proposed, and 100 drops of laudanum were directed; an hour elapsed—no sensible effect having been produced, when the *dose was repeated*, and in half an hour the patient was under its full influence. He awoke the next day free from pain or tenderness, and so recovered. The same gentleman has been frequently attacked since with the same affection, and uniformly after being bled and evacuated, he has recourse to his anodyne, which rarely fails to quell the disease. But to be efficacious, the dose must be *heroic*, at least such was the opinion of Dr. Post, who often remarked that practitioners, especially in England and France, were not aware of the value of opium in inflammatory diseases, for even when employing it in such cases, their doses were too trivial to exert any marked influence over the malady. He himself always exhibited it under the opinion, that to obtain its soothing effect upon the system, and its *paralyzing* influence over the disease, it must be given in large doses. In diarrhœa and certain conditions of dysentery, after having cleansed the passages, he employed laudanum or Dover's powder with the happiest effect; in fact, he rarely used much else than salts and Dover's powder in diarrhœa, in adults. In his own case he was no less prodigal of anodynes than with his patients. Being, as you well know, for many years a constant prey to pleuritic affections, his treatment of himself was short and efficacious, viz. blisters and purgatives, followed by 80 or 100 drops of laudanum, which quieted his cough—allayed pain, and soon placed him in condition to resume his business.

In conclusion, permit me to state an occurrence which took place under my own eyes, two years previous to his death. He was then violently attacked with pleurisy, accompanied with much fever, for which he had been purged and blistered, and at the period in question, was under the use of antimonials. At this time he directed me to give him 70 drops of laudanum. I remonstrated, directing his attention to the dryness of his skin, its increased heat, and the frequency and hardness of his pulse. His answer was, "believe in my experience rather than in your theory; give me 70 or 80 drops of laudanum, and an hour will convince you of its propriety." It was given, and within the hour his pulse became calm, full and slow; his skin was covered with a gentle perspiration, and his condition strikingly improved. He left his bed the next day, and frequently since has he said to me, "I think I have given you a clinical lecture that you will remember."

Such, my dear sir, are the facts concerning which we some time since conversed, and if they can be of any service to you, employ them as you think proper. Yours truly,

F. G. KING.

To V. MOTT, M.D.

PART SECOND.

CRITICAL ANALYSIS.

ART. VII.— *The Transactions of the American Medical Association*, vol. x., 1857. Philadelphia, 1857.

THE American Medical Association has now closed its first decennial period. As it contains the collective wisdom of the profession of the United States, it should contribute largely to the advancement of medical science. But it must be confessed, that the expectations of its originators and early friends have hardly been realized. Its yearly publications should be of such a character as to command a large and profitable sale, but instead of this, there are not sufficient purchasers for the small edition of one thousand copies. The fault is on the part of the profession, in not contributing a more liberal supply of reports and voluntary communications. There were only four competitors for the prizes at the meeting last May. As long as such remissness continues, the proceedings of the Association will necessarily lack that high order of merit, which we should expect from such a source.

There are, however, in the volume of the Transactions for the past year, several excellent papers, a brief review of which will be instructive.

Among the reports, is one by D. M. REESE, M.D., of this city, on the important subject of *Infant Mortality in Large Cities*. To prevent this mortality, he recommends legal enactments to prohibit the marriage of diseased individuals, to improve the condition of the residences of the poor, and to suppress distilleries, from which so many of the cows are fed that supply the poor with milk. He advises also the founding of children's hospitals, where the sick children of the indigent may have the benefit of pure air, cleanliness, and wholesome food. But according to the report, the great mortality is not confined to children of the poor. Among the wealthy of our cities, luxurious modes of life, so incompatible with healthy pregnancy and lactation, and the common practice of employing hired nurses, are fruitful sources of disease and death. The writer embraces in his remarks the subject of the death of the fœtus, and recommends the establishment of foundling hospitals, and lying-in asylums, as the surest means of preventing the frequent crime of abortion.

The report on the *Medico-Legal Duties of Coroners*, by A. J. SEMMES, M.D., of Washington, is a well-written contribution, and one that should be made more public than the sale of the Transactions will allow. After an interesting historical sketch of the office of coroner, and a recital and just deprecation of the evils attending it, as it is at present constituted, the report goes on to recommend a remodelling of

the laws regulating the office, so that the coroner shall be appointed by judges of the criminal courts, shall be a regularly educated physician, shall hold his office during good behavior, shall at his discretion conduct the inquest in secrecy, associating with himself two other physicians, and instead of fees, shall receive a specific annual remuneration.

These suggestions deserve to be calmly considered. The known incompetency of many of our coroners, either from lack of natural talent, or of requisite medical education, gives importance to the suggestion of a different mode of appointment, and so much experience is required, in order to conduct an inquest properly, that the tenure of the office should certainly be longer than from one popular election to another. We want, too, no better evidence that the coroner should, at his discretion, conduct the investigation privately, than is afforded by the famous Burdell case, to which Dr. Semmes alludes.

There is but one report in the present volume on epidemics ; this is by J. F. POSEY, M.D., *on the Topography and Epidemic Diseases of Georgia.* Its interest is entirely local.

The *Report on the use of Cinchona in Malarious Diseases,* by F. HINKLE, M.D., contains the author's experience in the use of this remedy. After a thorough and impartial trial of six years, he feels authorized to recommend the substitution of cinchona for quinia.

The next report is *on the Blending and Conversion of Types of Fever,* by C. G. REESE, M.D., of Wisconsin. The writer discusses his subject with fair ability, and concludes that conversion or blending of types of fever does not depend upon the introduction of a new and specific poison.

Prof. DUGAS, of Georgia, contributes a short but interesting *Report on a new Principle of Diagnosis in Dislocation of the Shoulder Joint,* with illustrations. The following proposition embraces the substance of this report : " If the fingers of the injured limb can be placed by the patient or by the surgeon upon the shoulder, while the elbow touches the thorax, *there can be no dislocation ;* and if this cannot be done, there *must* be a dislocation." Prof. D. proceeds to prove this proposition, and establishes, in our opinion, a very important point in the diagnosis of this inquiry.

The following are interesting and valuable reports ; the one by GEO. SUCKLEY, M.D., on the *Fauna and Medical Topography,* the other by J. G. COOPER, M.D., on the *Medical Flora, of Washington Territory.*

According to Dr. Suckley, the types of both birds and mammals of this whole region resemble more those of eastern Asia, than of the Atlantic States. Among the indigenous mammals are the buffalo, panther, badger, wolverine, the mountain sheep, mountain goat, beaver, otter, fox, pine marten, four species of bears, five or six of wolves, and several of deer, hares, marmots and squirrels. The common domestic animals, as the horse and ox, which have been introduced, thrive well, and some of them have become abundant. The author has collected about one hundred and sixty different species of birds, several of which belong to the grouse, snipe and dove families. The principal

fish, found in the Columbia River, is the salmon, and as vast shoals of it abound, it is often the chief food of the Indian. In the salt water of the western section of the territory, there are many species of fish, some of which have not yet been described by naturalists. The only venomous reptile is the rattlesnake, the most common of which is the Crotalus Lucifer. This species is especially abundant among the basaltic rocks of the upper Columbia.

Numerous species of insects exist in the territory, the most interesting of which is a blistering fly, termed, by Dr. Leconte, of Philadelphia, the Lytta Cooperi. This insect is found on the flowers of the yarrow, and may yet be valuable for its vesicating property.

Among the medicinal plants are the conium maculatum, uva ursi, several species of the ranunculus, one of aconite, one and perhaps two of liquorice, one of valerian, two of arnica, one of gentian, and one of veratrum.

The diseases are more sthenic than those of the Atlantic States, and consequently bear the lancet better. Among the foreign residents, rheumatic affections, and among the natives, syphilis and consumption are most commonly met with. The Indians are acquainted with many cathartics, emetics, diuretics, and emmenagogues among the indigenous plants. They apply a heated stone to the abdomen in suppression of the lochial discharge, and employ old women to suck the surface of the body, in case of internal inflammation, in the belief that the evil spirit may be drawn out. The tail of the rattlesnake is employed as an ecbolic, and, as this agent is used for the same purpose, among different and distant tribes, Dr. Suckley is of opinion that there may be some virtue in it.

The next paper in the Transactions is the third part of Prof. Hamilton's *Report on Deformities after Fractures.* This is one of the most valuable contributions ever made to American surgery. The report is entirely statistical, and therefore of permanent value, the writer having been engaged for years in collecting the materials from his own and the practice of other scientific and experienced surgeons. We now know the usual amount of deformity in cases of fracture, when treated skillfully, and a long-felt desideratum is supplied. As a work for reference in suits of malpractice, the report will be highly valued. We cannot, at this time, make it the subject of a more extended notice.

The last papers in the volume are the Prize Essays; one on the Excito-Secretory System of Nerves by Prof. H. F. Campbell, of Georgia; the other by Wm. A. Hammond, M.D., U.S.A., entitled Experimental Researches relative to the Nutritive Value and Physiological Effects of Albumen, Starch, and Gum.

The first of these is an elaboration of the doctrine previously promulgated by Prof. Campbell, and by Marshall Hall, namely, that the ganglionic system controls the secretory processes, and that in consequence of the extensive ramifications and connections of this system, agencies operating on distant parts, may excite or modify the secretions, The doctrine is important on account of its referring to nervous agency,

many phenomena in the system, which have been attributed to revulsion or vicarious action.

The essay of Dr. Hammond is based on carefully conducted experiments on himself, from which he deduces the following conclusions:

1. That albumen may be assimilated into the system, in such quantity as to furnish a sufficiency of both nitrogen and carbon to the organism.

2. That under the use of an exclusively albuminous diet, the nitrogenous constituents of the urine are increased over the ordinary average amounts, though not in proportion to the quantity of albumen absorbed into the circulation.

3. That either some other means than the urine exist for the elimination of nitrogen from the system, or the excess (over two-thirds) is retained in the organism, even when the body is rapidly decreasing in weight.

4. That the continued use of albumen as an article of food increases the proportion of this substance (and of fibrin) in the blood, and in a short time causes it to appear in the urine.

5. That whilst pure albumen cannot be regarded as of itself adequate to supply the several wants of the system, there is no reason why, when associated with suitable inorganic matters, it should not support both life and health.

6. That starch can be assimilated by the absorbents in more than sufficient quantity to sustain the respiratory function.

7. That under its use, the nitrogenous constituents of the urine are very much reduced in amount, even below what would probably occur during inanition, and that although starch is not capable of nourishing the tissues, it is yet serviceable, aside from its heat-producing power in retarding their destructive metamorphosis.

8. That the continued use of highly amylaceous food causes the appearance of sugar in the urine.

9. That under the use of such aliments, the nitrogenous constituents of the blood are diminished, and the carbonaceous increased.

10. That gum is altogether incapable of assimilation, and therefore possesses no calorifacient or nutritive power whatever, but is on the contrary a source of irritation to the digestive organs.

11. That in consequence of the above facts, the solids of the urine, during the immediately preceding researches, were entirely derived from the waste of the tissues of the body, and the carbon exhaled by the lungs from the consumption of its fat.

12. That gum, when exclusively used as food, from the irritation it causes in the intestinal canal, and the fact of its non-assimilation, induces more constitutional disturbance than either starch or albumen, and that under a similar condition starch is more productive of ill consequences than albumen.

J. L. S.

ART. VIII.—*On the Constitutional Treatment of Female Diseases.* By EDWARD RIGBY, M.D., etc., etc., (of London). Philadelphia, Blanchard & Lea, 1857, pp. 256.

DR. RIGBY offers this little volume "to that large portion of my professional brethren who, being engaged in general practice, have not been able to devote their special attention to a class of affections which, nevertheless, must frequently come under their notice."

This is the key note to the book, disarming much criticism, and conciliating the good wishes of all who desire to attract general attention to a class of diseases which has so long shrunk from notice, and eluded less intelligent methods of exploration.

Our author always writes conscientiously, from a careful personal observation, and much study; while the knowledge of German obstetric literature, so apparent in all his works, makes them valuable to that class of English and American physicians who are are fain to pick up the crumbs which fall to their share, in the shape of occasional translations and extracts.

It is much to be regretted that the valuable German contributions to obstetrics are not brought more generally within the reach of physicians ignorant of the language; and, most certainly, those of our brethren who would devote their time to this task would add greatly to our common stock of knowledge, and would deserve to be placed far above that American variety of leech, subsisting on reprints of English books, and besmearing them with notes of doubtful value.

We have, throughout this country, many German physicians, learned and accomplished men, who might employ their leisure most profitably to the profession and themselves in such a task; and we earnestly hope that these hastily-written lines may stimulate some such endeavor.

The subjects treated of by Dr. Rigby are the disorders of menstruation, uterine and vaginal discharges, inflammation of the os and cervix uteri, displacements of the uterus, of the bladder, polypus, fibrous tumor, malignant diseases, cauliflower excrescence and corroding ulcer, pruritus pudendi, diseases of the urethra, disorders, displacements and diseases of the ovary.

The title of the work does not at all compromise the author as an opponent of the local treatment of these diseases. His design is to oppose the abuse of these means, not their use; and, in our judgment, the tendency to exclusive local treatment is a natural error of the times, fallen into alike by some well acquainted with the subject, and by many who know nothing more than to apply caustics ignorantly, or, in the words of our author, "dishonestly."

It was but the other day that a woman applied to the reviewer, in much anxiety of mind as to the propriety of a course of treatment to which she had been subjected. Her sketch of symptoms presented no disorders of menstruation—history of vaginal discharges—nor indeed any symptoms which pointed clearly to the uterus. Her treatment had consisted in the application of caustic, every two or three days, for a long period of time. On examination, the vaginal cervix was wanting

and the remains of the posterior lip agglutinated to the posterior vaginal wall—the os not sufficient to admit a sound, its circumference a cicatrix.

Another patient, now nearly well, has been cauterized and leeched for nearly two years without benefit. Her disease, which had not been recognized, consisted in prolapsus of the ovary deep down in the recto-vaginal pouch, where it could be grasped between one finger in the vagina and another in the rectum; and the uterus could be lifted away from the tumor by the uterine sound. This organ was entirely healthy, and the great sufferings of the patient have yielded principally to the use of the tartar-emetic ointment in the manner recommended by Dr. Rigby and others, and to position. At present the ovary has slipped beyond reach, and the characteristic pain has gone.

The tone of the work before us is moderate, well adapted to awaken an interest in the subject and stimulate further research; and, therefore, the purpose of the author, publisher and reviewer will best be answered by referring those interested in the matter to the book itself.

G. T. E. JR.

ART. IX.—*Das halisteretische Becken in seiner Weicheit und Dehnbarkeit während der Geburt durch neue Beobachtungen erläutert. Nebst allgemeinen Bemerkungen über Halisterese.* Von DR. KILIAN, Professor an der Universität zu Bonn. Bonn: bei Adolph Marcus, 1857.

The Halisteretic Pelvis in its Softness and Dilatability during Parturition; illustrated by some new observations. By H. F. KILIAN, professor in the University of Bonn. Bonn: Adolph Marcus, 1857, pp. 107. With four plates, three lithographic, and one wood-cut.

IN the number of this Journal for May, 1857, I gave an analysis of Dr. Kilian's work on Spondilolisthesis and Acanthopelis. The same author has very recently described another kind of pelvic deformity, which is even more interesting than those referred to. If Dr. Kilian was not already well known, this thesis alone would be sufficient to establish his reputation. It is altogether a classical work, and ought to be translated into the English language in order to enable every member of the profession to make himself fully acquainted with its contents. The scientific researches laid open in these pages are not confined to midwifery, but the pathologist as well as the physiologist will peruse them with equal interest.

This work is written with the intention of proving

I. That osteomalacia (halisteresis) and rachitis are diseases essentially different one from another.

II. That there are two kinds of osteomalacia, one to be called: O. psathyra (fracturosa), the other one: O. apsathyros (cohærens s. cerea).

The description and investigation (anatomical, chemical, and microscopical) of the latter section of osteomalacia illustrated by some of the most interesting observations, comprise the bulk of this work. In

opposition to some of our most prominent men of the profession, such as Burdach, T. F. Meckel, T. Hunter, P. Frank, Boyer, Richter, Hohl, Scanzoni, etc., the author has always warmly defended his opinion, that the above-named affections of the osseous system were of a different nature. In 1829 he published a thesis on this question *

Dr. Kilian's opponents contend that rachitis is an osteomalacia of the growing bone, and osteomalacia the rachitis of the adult bone; that both diseases are curable by nature or by therapeutical treatment; that the symptoms, course, and pathological anatomy of both diseases are often the same; and, lastly, that the form of a rachitic pelvis sometimes is like that of an osteomalacic basin. Every one of these points is subjected to a severe criticism by Dr. Kilian, and their conclusions as to the identity of both diseases rejected. Dr. K. was the first obstetrical author who pointed out two different forms of osteomalacia, viz. the frangible (fracturosa, psathyra), and the waxlike, or a soft one (cerea, apsathyros). He considers their difference as depending not upon a different stage, but upon a difference in the nature of the softening process. The latter is characterized by the fact that the mollified bones remain soft and are never inclined to break even after violent movements, and injuries of the body, unless the disease is cured *by nature*, as it happens sometimes, *in consequence of a fresh and general deposition of salts.* The most remarkable cases of O. cerea are those of Anna Elizabeth Soupiot, related by Morand in 1752; of Elizabeth Forster, by William Cooper; and two observations, one by P. Frank, and one by Audibert.

The O. fracturosa, on the other hand, changes the skeleton in such a way that the bones break on the slightest occasion, as it happened in the case described by Renard in 1804, where his patient had broken her bones upwards of eighty times during her life. But these two peculiarities of osteomalacia are only observed after the disease has attained its utmost degree, while the bones in O. cerea in one stage of development are very much inclined to *infractions* (not *fractures*), the seat of which is always found in the external layers of the osseous tissue, while the centre is soft and pliable.

Both rachitic and osteomalacic bones constantly present *a want of (bony) salts*, but of a different nature. While in rachitic bones the chondrin elements are *not supplied* with a sufficient quantity of salts from the beginning, there is a constant *deduction* of salts from the adult or perfectly completed bone in osteomalacia. This is the chief difference in the pathological process of both diseases, and the author proposes to call this latter affection *halisteresis*,† instead of osteomalacia.

The rest of the work is devoted to a full chemical and microscopical investigation into the nature of halisteresis cerea, illustrated with some of the most remarkable cases ever recorded in the annals of obstetrical science, and which came under the author's own observation. They es-

* *Beiträge zu einer genaueren Kenntniss der allgemeinen Knochenerweichung der Frauen, etc.* Bonn: Marcus.

† Derived from ἅλς, salt; and στέρησις, privation.

tablish, beyond all doubt, the fact, that osteomalacic pelves, contracted to the utmost degree, and giving an absolute indication for Cesarian section become in some instances so much softened and dilatable by the act of parturition, that a full grown living child is pushed through them by the labor pains alone, or by force of an easy forceps operation.

Among the first observations mentioned of pelves which were mollified during parturition, are to be noted those of Jos. Guich. Duverney, 1730, of J. P. Frank, 1788, of C. G. Schwalbe, 1828, and of G. Fleischmann, 1815. Lately, Dr. Murray Humphrey described a pelvis which was found soft and pliable, in a post mortem examination of a woman who died after Cesarian operation (*Assoc. Journal*, September, 1856). The outlines of a case are given in Dr. E. von Siebold's *Manual of Obstetrics*, 1854, where a woman with osteomalacic contraction of the pelvis, lying already on the table ready for Cesarian section, was delivered by turning, and extraction of a living child. In this instance, the softened bones yielded to the hand of the operator on entering the pelvic cavity.

One well observed case is described at length by John Welchmann, of Kington, Warwickshire (*The London Medical Journal*, vol. ii., 1790). After performing symphysiotomy on an osteomalacic pelvis, which was so much contracted that he was scarcely able to push his fore finger between the tubera ischii, a full grown child was suddenly expelled by two strong pains. The woman died six days later, and on examining the bones of this pelvis, they were found to be so soft that he could cut through all of them with "the greatest ease."

A similar well described case is that of Dr. Barlow, communicated by John Hull (*Observations on Mr. Simon's Detection, etc.*, March, 1794). The most important and reliable case on record is that of Dr. Weidmann (J. P. Weidmann, *De Forcipe Obstetricio, etc.* Moguntiaci, 1813–4, *c. tabul.*) Dr. W. was called in consultation to see a woman suffering the pains of her confinement. The fourth child was extracted by a difficult forceps operation ; the fifth one had to be removed by craniotomy, and since that time the pelvis was affected with osteomalacia, and had become so contracted that the attending physicians considered Cesarian operation as the only means for delivering the woman. Dr. W. advised to try artificial expansion of the bones. This was done ; first one, afterwards two and three fingers could be introduced into the pelvic cavity, till at last the full hand was received, the child turned, and easily extracted. The patient died five days after delivery, from exhaustion. The bones of the pelvis were found reduced to their former contraction, but even then dilatable.

A similar observation is that of Professor Ritgen (*Zeitschrift für Geburtsk.* 1831, Bd. vi., Heft 3), who found the pelvic bones dilatable eight weeks before the full term, in a female affected with far advanced osteomalacia.

Two equally well described cases are to be found in Dr. H. W. Spengel's thesis on this subject, published in Heidelberg, 1842, and another one by Dr. Lange, in the *Medic. Jahrl. für d. Herzogth.* Nas-

sau. xi. H. Wiesb. 1853. The following cases came under the author's own observation.

Case 1.—Mrs. Clara Plott, of Cologne, was taken with a severe cold six months after her first confinement, after which she suffered for her lifetime from most distressing pains in her bones, especially during and after her second pregnancy. On March 16th, 1855, she was seized with the labor pains of her third child, and brought to the Cologne lying-in hospital. The pelvis was found to be so much contracted that even the introduction of the index, for vaginal examination, could not be attained, so that everything was prepared for the performance of the Cesarian operation. But suddenly, while laboring under violent pains, the woman exclaimed that the child was coming, and really the head of the fœtus became now visible between the labia pudendi, and in three minutes afterwards a living boy was born, of ten pounds' weight (medicinal). But the woman died four days afterwards from hectic fever. The entire corpse weighed only sixty-eight pounds, while all the organs differed very little from the normal state. The bones of the entire skeleton were soft and pliable. The arcus ossium pubis was so much compressed that the index finger was too large to be brought between the pubic bones ; the synostosis pubo-iliacæ stood only seven lines apart one from another. The lateral diameter of the pelvic entrance was $3\frac{1}{2}''$, while the cavities of both acetabula were so much drawn together that the lateral diameter, in the midst of the pelvic canal, was no more than $1''$ $8'''$. The distance of the tubera ischii was $2''$. The os sacrum was so much curved that the lower end of the os coccygis was only $3''$ $6'''$ distant from the promontorum. The pelvis was even now distensible in a great measure, and by gently trying to force the bones asunder, one could easily enlarge the pelvic cavity. The anterior section of the bones more especially, were so much softened that they resembled ligamentous structures, and when cut into, offered no more resistance than a fascia. A minute chemical analysis of the osteomalacic bones, conducted by Professor C. O. Weber, of Bonn, demonstrated one fact, viz., the diminution of phosphates, and the presence of lactic acid in the bones.

The microscopic analysis of a portion of the pelvis, made by Dr. Lambl, of Prague, resulted as follows : The alterations in the tissue, as detected by the microscope, resembled in many points those found in bones affected with ostitis and osteomyelitis. The succulence of the tissue that forms the marrow of the bones, seems to indicate an abnormal tendency of nutrition, in consequence of which an abundance of fluid matter is conducted to the bone, while the more solid elements are removed. But the consumption of bony particles in this specimen of osteomalacic bone, is of a peculiar character, the osseous fibres becoming soft, their striæ appearing very narrow, loose and transparent, *while they suffer no change in bulk or form.* This metamorphosis of osseous tissue into the original fibrous tissue, is the principal character of the pathological alteration.

Case 2.—Miss Catharine Becker, of Halsenbach, forty-one years of age, entered the lying-inn hospital of Bonn, April 8th, 1856, being

pregnant for the first time. She was very much disfigured, especially in regard to the lower extremities, so that she walked lame and with difficulty. By vaginal examination it was discovered at once that the pelvis was of the osteomalacic stamp, so much so, that the index finger could not be easily advanced under the arcus ossium pubis, while two fingers were sufficient to fill up the space between the tubera ischii ; the os sacrum was so much curved that the os coccygis protruded upwards as far as to the entrance of the pelvis. The bones, though very much misshapen, *were perfectly solid and unyielding*. The child proved to be alive, and considering all circumstances, there was an absolute indication to deliver the woman by the Cesarian operation, she being too far advanced in pregnancy (thirty-seven weeks) for admitting induction of premature labor. April 24th, 1856, the first pains commenced early in the morning, and increased in strength so much, that at three o'clock P. M., after previous rupture of the membranes, the head of the child had passed the entrance of the pelvis, *driving asunder the pelvic bones, especially so the arcus pubis, while it advanced.* The pliability of the previously hard bones became now so evident, that not the least doubt of this fact was left with the attending physicians, Prof. Kilian, Drs. Nettekoven and Hillmann. But as the force of the pains slackened, and the woman began to feel exhausted, Prof. K. applied the forceps to the head of the child, which was extracted *very easily, the bones of the basin yielding as if they were made of gutta percha.* The weight of the full-grown child was $6\frac{2}{3}$ pounds, the lateral diameter of the head being $3\frac{1}{4}''$, the greatest diameter $5''$.

Thirty hours after the child was born, the pelvis was once more closely examined, when it was found that the bones continued to be pliable, and were even more so than during parturition, for *there was left not a particle of the osseous elements in the arcus pubis, the left portion of which was changed to a mere ligamentous substance*, so that it could be moved to and fro without offering the least resistance. Nine days afterwards the bones were again more consolidated and harder, and on the tenth day the woman got up and walked around the room. On entering the hospital the woman measured $4'$, $2''$, $11'''$, while on May 17th she measured only $4'$, $2''$, $5'''$, so that she lost $6'''$ in height during twenty-four days after her confinement.

Case 3.—The following case was communicated to the author by Dr. Klaes. It happened on February 2d, 1857, in Brenig, a village near Bonn. When Dr. K. was called in to examine Mrs. Kau, he found the pelvis so much contracted that he was unable to introduce his forefinger any farther than to its second joint, so that it was out of the question to touch the os uteri. He therefore left at nine o'clock A.M., to summon some other physicians to assist him in the performance of Cesarian section, which was the only method left. When the doctor returned at three o'clock P. M., the child was already born, to his own and every one's astonishment. The experienced midwife who attended the woman during the absence of Dr. K., stated that under the most violent labor pains, the bones of the pelvis began to move asunder, and suffer the child to pass through the channel thus widened for its benefit.

The report of cases is concluded by a short notice and a wood-cut representation of a pelvis deposited in the pathological collection of Florence, Italy, the history of which closely resembles those described in this treatise.

In reviewing this subject, the author comes to the following conclusions :

1. There is a variety of osteomalacia or halisteresis which may be justly called O. cerea.

2. This form of osteomalacia can have such an influence on the pelvic bones in softening (not fracturing) them during parturition, that a full grown child may safely pass through the pelvic canal even if it was previously contracted to the utmost degree.

3. Therefore, every physician attending a case of even the highest contraction in an osteomalacic pelvis, has to take into consideration the facts presented in this work, and shape his indications in compliance with the experience resulting from these observations.

The last pages of this interesting article are intended to discuss and strengthen the value of these conclusions.

Even this short and incomplete analysis of Prof. Kilian's work on Halisteresis, will impress every one with its great importance, and excite a general desire to peruse the book.

E. NOEGGERATH.

ART. X.—1. *Report of the Surgical Staff of the Middlesex Hospital* to the Weekly Board and Governors, upon the Treatment of Cancerous Diseases in the Hospital, on the plan introduced by Dr. Fell. London, 1857, 8vo., pp. 114.

2. *A Treatise on Cancer and its Treatment.* By J. WELDON FELL, M.D., London, 1857, 8vo., pp. 95.

3. *New Discoveries relating to the Cure of Cancers;* wherein the Painful Methods of Cutting them off and Consuming them by Caustics are rejected, and that of Dissolving the CANCEROUS SUBSTANCE is recommended, with various instances of the Author's success in such practice on persons reputed incurable. In a letter to a friend, to which is added a Solution of some curious Problems, concerning the same Disease. By WILLIAM BECKETT, Surgeon. The second edition, with additions. London, 1712. 12mo., pp. 62.

4. *Surgical Tracts.* By the late J. O. JUSTAMOND, F. R. S. Collected by WILLIAM HOULSTON. London, 1789, 4to., pp. 394.

SELDOM has occasion required that we should step aside from our legitimate duties as journalist to notice in any way the doings of quackery; but the recent developments which have been made in a prominent hospital of the British metropolis will not permit us to remain silent. In an evil hour for the profession, the acts of, and the course pursued by, the Surgical Staff of Middlesex hospital have inflicted a deep injury

upon the honor of legitimate medicine. The facts which have reached us are mainly these : An adventurer in medicine of more than doubtful ethical character was recommended to the executive authorities of the hospital in question, by its surgical staff, to be allowed to pursue *his plan* (?) of treatment under their superintendence, in the cancer wards (which were founded in 1791 by Samuel Whitbread, by a bequest of £3,500) of the hospital, and the terms proposed by the surgeons were the following :

1. That he should *in confidence* communicate to the surgical staff the nature of the remedies employed by him, the method of their preparation, and the mode of using them.

2. That twenty-five cases should be subjected by him to treatment during eight months.

3. That he should pledge himself to publish the full particulars of his system of treatment within a period of six months ; and in case of his failing to do so, that duty should be undertaken by themselves.

In one of the volumes, whose title stands at the head of the article, we find the reasons which lead the adventurer to the unprofessional course pursued, to be—fear that the information which he should set forth would be passed over with neglect—disrepute from injudicious application of the remedies by the hands of others—and a fear of being anticipated in the public mind as the originator of the plan. And thus during six months were the surgical staff of Middlesex hospital in silent *confidential* association, with one whose acts proved him to be of the quack species of the genus *homo.* Could such a contamination of the good name of the profession of medicine occur in this city ? The history of the past presents no such foul stain upon the medical character of the institutions of our city or country. God grant that the shadow of their fair name may never be less; and that they may never be disgraced by the charge of having fostered the design of an adventurer in identifying himself in character and respectability with them.

From a perusal of the materials before us we find that the peculiarities of treatment consist in the use of ointments, in which the sanguinaria canadensis and the chloride of zinc are claimed to be the active ingredients. The following extracts will give our readers an idea of the value claimed for these agents, and in the words of the *self-styled* originator of the plan himself :

"The first experiments made with the puccoon were upon ulcerative surfaces, and although months of continued application, yet the removal of the tumor was effected, and the patient cured. It was then combined with various substances with a view to hasten its action; but none appeared to do so well as the chloride of zinc, for with this compound large ulcerated tumors were removed in a few weeks with comparatively little, and in many cases, no pain ; at the same time obtaining by absorption, and by the internal use, all the good effects of the puccoon.

"The next effect was to adapt the treatment to non-ulcerated tumors ; and as a preliminary step, the cutis was destroyed with nitric acid, and the paste applied ; but it was found that the eschar pro-

duced by each application was so thin, that it would require a long time to remove a large tumor.

"Incisions about half an inch apart were then made through the eschar, avoiding the living tissues, and the paste spread upon strips of cotton inserted into them daily; this plan succeeded admirably, and is *believed to be entirely original.*

"It was also found that although the action of the puccoon was much hastened by the addition of the zinc, yet it was slow enough to allow its complete absorption, thereby enabling it to exert its peculiar constitutional effects, and at the same time removing the diseased mass in a few weeks.

"The compound generally used is prepared according to the following formula:

℞ Sanguinariæ Canadensis, ℥ss. vel. ℥i.
Chlor. Zinc, ℥ss. vel. ℥ij.
Aquæ, ℥ij.
Pulv. Sem. Tritic. Hibern., q. s.

Mix, and form a paste the consistence of treacle.

"Sometimes the sanguinaria is used in the form of a decoction, by boiling it down in water from four to two ounces; in this case no water is used in mixing the paste.

"The proportions of the sanguinaria and zinc varied in the different cases according to the effect produced.

"This is spread upon strips of cloth, cotton or wool, and inserted daily into the incisions; generally in the course of two to four weeks the disease is destroyed, and the mass falls out in the course of ten or fourteen days afterwards, leaving a flat, healthy sore, which generally heals with great rapidity. This treatment refers chiefly to those cases that are well marked, or that have made some progress in their destructive career; but we often meet with other cases of an incipient nature, where the disease, although fully developed, is still in a quiescent or dormant state. In such cases, I often accomplish a cure by means of absorption, giving no pain to the patient, and not injuring or removing any important part, as the breast, which must occur if the first mode of treatment is resorted to. Not only is this of use in incipient cancer, but I have seen it of much use when applied to the lymphatic glands, which had become secondarily affected. In such cases, I remove the part primarily affected *en masse*, by means of the Sanguinaria paste, applying at the same time the following ointment spread upon cotton, over the enlarged gland or secondary tumor. This ointment is composed as follows (and is called the brown ointment):

℞. Sulph. zinc, ℥vi.
Sanguinariæ, ℥ij.
Myricæ ceriferæ, ℥j.
Extr. opii. (aquos).
Ext. conii, *a a*, ℥vi.
Ung. cetacei, ℥vi.
Misce, et fiat ungt.

"In conjunction with this preparation, I use an ointment of the iodide of lead, generally applying each twelve hours alternately. The following is the formula used :

℞. Iod. plumbi, ℈j.
Glycerine, ℥j.
Ungt. cetacei, ℥ij.
Misce. et fiat ungt.

"With a steady, persevering use of these two ointments, I have often dispersed incipient tumors, which I have no doubt were cancerous.

"These are the external means of treatment I employ, which, although in themselves eminently successful, yet I am not content with them alone, but also pay particular attention to the general health, ordering a nourishing and sustaining diet, besides giving internally the puccoon in small and repeated doses. A remedy that exerts so much influence when applied externally, must be exhibited with caution, I therefore seldom exceed half grain doses, three times daily. This is given in the powder or decoction ; in the former cases, I give it alone or combined with the sixteenth or twentieth of a grain of iodide of arsenic and one grain of the extract of cicuta, made into a pill ; or, if given in decoction, I generally combine it with the fluid extract of taraxacum.

"The ointment of the sulphate of zinc I have been in the habit of applying with marked success in cancer of the womb. Unlike the Vienna paste, it can be applied not only with safety, but with impunity, as it does not injure the adjoining tender parts."

In the report of the surgical staff of Middlesex hospital, the first general question which is considered is that of "The constitutional effects of the treatment." The opinion of the surgeons on this point is exceedingly indefinite. Those patients who were compelled to take opiates to relieve their pain while under treatment, and in those in whom the disease was not arrested, the general health of the patients was worse than it would have been if the disease had been left to itself. In forty-seven cases reported, it turns out that in eighteen the disease was not arrested. It is also stated that the treatment exerts no special power over the cancerous diathesis ; healthy and morbid parts are alike destroyed in the same ratio of facility. The reporters express the belief that sanguinaria is worthless as a diathetic agent in cancer.

The local effects of the treatment are next considered. The inflammation in the parts adjacent to the eschars produced by the treatment was unusually slight, and not attended by the formation of secondary abscesses. The local effects upon the cancerous energy is spoken of as follows : "in some the treatment seemed to give rise to a rapid deposit of new cancerous material ;" again, "in other cases, though rapid growth took place during the treatment, it was not aggravated and could be finally overcome ;" and, "in a third class of cases the previously rapid growth seemed to be brought to a check." The pain attendant upon the treatment is thus spoken of, "Considering the whole subject of pain, our observation leads us to say that as a general

rule, it was severe at some time or other in every case." Again, "the severest suffering was that attending the treatment of epithelial cancers, especially of the face, on the ulcerated surfaces of which even the diluted paste could scarcely be endured. Some patients so suffering were obliged to give up the treatment, and leave the hospital unrelieved."

The results of the treatment, by reference to the appendix of the report, in which forty-seven cases are represented as being under treatment, may thus be summed up. In fifteen cases the growth was removed, and at the time of making the report there had been no return of the disease; in seven the growth was removed, but the cicatrix not reported as healed; in eight, the treatment was useless; in six, the disease returned; in five, the growth was not removed—the condition of the patients improved; in two, the disease was not cancerous; in two, the patients died under treatment; one was made so much worse that the treatment was suspended; and one would not submit longer to treatment.

Fnally, in the following words of the report we have the clearly expressed opinion of the surgeons of Middlesex hospital that "the sanguinaria is inert—the chloride of zinc paste was known before; but the incisions constitute a new feature in the treatment of cancerous tumors, for which we find no parallel in the writings of the past, or in the practice of present surgeons." The stupidity which characterized the first step of the Middlesex surgical staff, in departing from the standard of medical ethics, so far as to associate with one who pretended to cure by a secret remedy, and who had descended to the course pursued by boasting adventurers in medicine, here finds its parallel in the ignorance which is exhibited of the literature of the subject over which they sit in judgment.

In the pamphlet of Beckett, we find that incisions constitute a part of the treatment; we subjoin the following account of the course he pursued in a case in which the cancerous tumor was situated beneath the tongue. The difficulties which he encountered in its removal "put me," says he, "upon a necessity of making incisions into the body of the tumor, that I might commodiously come to the remaining part, and so dispose some little dossels of lint, armed with our dissolvent that they might have their desired effect, and this in every respect answered what we proposed; so that we proceeded immediately to incarn the ulcer, which we did by a lotion prepared of an infusion of some vulnerary herbs and *Mel Rosar.* Thus was this woman perfectly cured, and has continued well about a year."

In the surgical tracts of Justamond we find that he resorted to the use of incisions into the dead tissues and diseased mass in order to facilitate the action of the agents he used. But our space will not allow of our quoting his own language. We must bring this notice to a close, and therefore will only add that the incisions, which, according to the surgeons of Middlesex hospital "constitute a new feature in the treatment of cancerous tumors" *has a parallel in the past,* in at least the writings of Beckett and Justamond, who, if we mistake not, were both in their time surgeons of London hospitals. S. S. P.

BIBLIOGRAPHICAL NOTICES.

ART. XI.—*Clinical Lectures on the Diseases of Women and Children.* By GUNNING S. BEDFORD, A.M., M.D., Prof. of Obstetrics, the Diseases of Women and Children, and Clinical Midwifery, in the University of New York. Fifth edition, carefully revised and enlarged. New York: Samuel S. and William Wood, 1857, pp. 604.

THE success of this work is altogether unprecedented—a fifth edition being demanded in a little more than two years from its first issue. It has been received thus favorably not only by the profession at large, but by the medical press of this country and of Europe. Some of the most eminent writers in this department abroad, have spoken of the work in terms of commendation, which must be gratifying to the author. In the preface to this edition, Prof. Bedford gracefully acknowledges the compliments so universally bestowed upon his book.

The fifth edition has been carefully revised, and useful additions have been made to the formulæ of remedies.

ART. XII.—*A Dictionary of Medical Science, containing a concise explanation of the various subjects and terms of anatomy, etc., with French and other synonymes.* By ROBLEY DUNGLISON, M.D., L.L.D., Prof. of the Institutes of Medicine, etc. Revised and very greatly enlarged. Philadelphia: Blanchard and Lea, 1857, pp. 992.

THE present is the *fifteenth edition* of this popular Medical Dictionary. The work is now in such general use among medical men, that it requires no words of commendation from us. This edition is the result of careful revision, and contains an addition of about 6000 subjects and terms.

ART. XIII.—*The Hand-Book of Practical Receipts, of Every-day Use: a manual for the Chemist, Druggist, Medical Practitioner, Manufacturer, and Heads of Families;* comprising the officinal medicines, their uses and modes of preparation, and formulæ for trade preparations, mineral waters, powders, beverages, dietetic articles, perfumery, cosmetics, etc. A Glossary of the terms used in chemistry and medicine, including old names, contractions, vulgar and scientific denominations, with a copious index to all the preparations. By THOMAS F. BRANSTON. First American from the second London edition. Philadelphia: Lindsay and Blakiston, 1857, pp. 307.

THIS is a very convenient manual of reference for the physician. It contains full and accurate descriptions of all chemical and pharmaceutical preparations, as also of their ingredients; of all the various substances used in the arts, and in household economy.

ART. XIV.—*The Practice of Surgery.* By JAMES MILLER, F.R.S.E., etc., Professor of Surgery in the University of Edinburgh, etc., etc. Revised by the American editor. Fourth American, from the last Edinburgh edition, illustrated by three hundred and sixty-four engravings on wood. Philadelphia: Blanchard and Lea, 1857, pp. 682.

THE present edition of this work has been improved by the addition of matter relating to the progress of American surgery, and numerous wood-cut illustrations.

ART. XV.—*A Practical Treatise on the Diseases of Children.* By J. FORSYTH MEIGS, M.D., Fellow of the College of Physicians of Philadelphia, etc., etc. Third edition, carefully revised. Philadelphia: Lindsay and Blakiston, 1858, pp. 724.

THE third edition of Dr. Meigs's work has undergone thorough revision, and ranks now among the most complete treatises on the diseases of children accessible to the American practitioner.

ART. XVI.—*Materia Medica and Therapeutics; with ample illustrations of practice in all the departments of medical science, and very copious notes of Toxicology, suited to the wants of medical students, practitioners and teachers.* A new edition, revised and enlarged. By THOMAS D. MITCHELL, A.M., M.D., Professor of Materia Medica and General Therapeutics in Jefferson Medical College, etc., etc. Philadelphia: J. B. Lippincott and Co., 1857,

WE prefer to allow the author of this work to speak of the merits of this edition in his own quaint but happy style. "It is said that nobody reads a preface, and whether this be read or not, is immaterial. It is written chiefly to say that the author has carefully revised the work, and brought it down fully to the present time. As a consequence, the bulk of the volume is augmented, a circumstance altogether unavoidable. He has added his own experience on various points, and the best testimony of the great world of physic, with the design of putting a book of real value into the hands of students and practitioners. Theoretical notions, which are but too often of mushroom stability, have been almost entirely eschewed, and the book is therefore chiefly a volume of facts, quite as reliable as any to be furnished by the profession anywhere."

PART THIRD.

MEDICAL RETROSPECT.

Report on the recent Advances of the Medical Sciences in France; prepared for the NEW YORK JOURNAL OF MEDICINE. By E. BROWN-SÉQUARD, M.D., Professor in the Cooper Institute, New York.

PHYSIOLOGY.

1. *Glucogeny.*—There is something discouraging in finding every day that the most seductive theories, and even those which seemed to be most solidly grounded, are not true, and that, after having had everything more or less completely settled in our mind, concerning a number of facts on the same subject—after having had what we were entitled to admit as a sound and safe explanation, we must give it up, acknowledging that it is a deceitful one, and that we must look for another. But when new facts of great importance are discovered and real advances are made in science and in its applications, we may easily console ourselves for the loss of our theories. These reflections come naturally, when we study what has recently taken place concerning the formation of sugar in the animal body, *i. e.* glucogeny. Every one knows upon what grounds Prof. C. Bernard had established his views concerning the formation of sugar by the liver. He had found a great deal of sugar in the liver and in the blood, going away from this gland, and he never found sugar in the blood going to the liver in animals, fed upon meat or deprived of food. It seemed positive from these facts that the liver produced sugar, which, according to Bernard, being brought into the blood and circulating with it through the heart and the lungs, was destroyed in these organs. It is well known that M. Figuier tried to prove that the views of Prof. Bernard were not correct. He thought that the liver was an organ in which sugar coming from the digested food, accumulated, and that there always was sugar in the portal blood in animals that had been fed only upon meat, showing that meat in the bowels may give origin to sugar. If, according to M. Figuier and M. Longot, sugar is not easily detected in the portal blood, it is because the presence of certain albuminous substances prevents the ordinary reactions from taking place. Bernard and Lehmann replied that, in adding to the portal blood a very small quantity of sugar, they always had the characteristic reactions, while they had none or hardly any when they had not added sugar. About eight months ago Bernard made the startling discovery that after having washed away not only all the blood contained in the liver, but also the previously formed sugar, there was a rapid formation of sugar taking place

without blood in this gland. Some time afterward he extracted from the liver a peculiar substance which he called glycogenic, on account of its property of spontaneous transformation into sugar. This fact seemed at first, to settle the question, when a veterinary physician of Toulouse, M. Sanson, found dextrin in the liver, in the lungs, in the spine, in the kidneys, etc. Bernard replied that the glycogenic substance of the liver is different from dextrin, and he tried to show that the presence of dextrin in the principal organs and in the blood, depends only on the kind of food, while the glycogenic substance of the liver may be formed with any food or without any food. But now the question has become much larger, as many micrographers and chemists (Virchow, Carter, Bush, Bertholot, Schrant, etc.), have found that normally, many elements exist in the body which may easily be transformed into sugar, so that any organ may be considered as able to produce sugar. However, it remains certain that the liver is the principal focus of the production of glucose, and if Bernard has been mistaken in trying to show that the formation of this substance is a function belonging solely to the liver, he has, nevertheless, opened the way to the discovery of the very facts which seem to shake his theories.

2. *Absorption of fatty substances.*—Messrs. Bernard and Colin have undertaken to show that the extirpation of the pancreas does not prevent this absorption and the formation of milky chyle. In admitting that they are right, and that Prof. Bernard has been mistaken in asserting that the formation of the chyle is due solely to the absorption of fat emulsioned by pancreatic juice, the principal fact discovered by Bernard remains, nevertheless, exact ; pancreatic juice is the only digestive fluid which makes a complete emulsion with fat. But it may be also, that in animals deprived of the pancreas, other glands secrete some of the principles which constitute the pancreatic juice, as other glands secrete urea when the kidneys have been extirpated.

3. *Transmission of sensitive impressions.*—The writer of this letter has found by experiments on animals, and by clinical facts, that the sensitive impressions which come from the right side of the body go up to the brain in the left side of the spinal cord, et vice versa. Lately, M. Chauveau has tried to explain otherwise one of our experiments, which consists in dividing transversely a lateral half of the spinal cord. According to M. Chauveau, there is truly more pain than usual, when the limb behind and on the side of the section is irritated, but this pain does not proceed directly from this limb, and it is due to reflex contractions in the three other limbs. There are two facts which may be easily observed, showing that this interpretation must be rejected : 1st. The contractions in the three non-paralyzed limbs often take place only after the animal has shown by crying that it felt pain. 2d. Sometimes there are no contractions in these limbs, and nevertheless, the animal cries. Besides, in man, in cases of alteration of one side of the spinal cord, sensibility remains in the parts of the body on the same side, whilst it is lost on the opposite side.

4. *Laws of muscular irritability, cadaveric rigidity and putrefaction.*—In the paper read at the *Académie des Sciences* on this subject, the writer has tried to show that every contraction, some time before death, determines in muscles a peculiar change which after death hastens the appearance of cadaveric rigidity, and of putrefaction. It is true that rigidity and putrefaction appear soon when convulsions have been violent, and last a long while in tetanus, in hydrophobia, in certain poisonings; so it is also in animals and men killed by lightning, in animals hunted to death, in cocks after a long fight, etc.

PRACTICE OF MEDICINE.

1. *Means of detecting albumen in urine.*—Dr. C. Gigon has made numerous experiments on the various tests of albumen in urine. He thinks he has ascertained the presence of this principle in normal urine, and he goes so far as to state that it is always to be found. This seems to be in opposition with Becquerel and Vernois, who think that albumen in urine is constantly a symptom of alteration of the kidneys. We have seen, long ago, that albumen taken in excess, as food, passes into the urine, and we could not admit the ideas of Messrs. Becquerel and Vernois. Now, the facts put forward by M. Gigon show conclusively the error of these chemists. One of the causes of the discovery of M. Gigon consists in his having made use of chloroform as a test. It seems that chloroform is the most powerful agent of coagulation for the albumen; only *one thousandth* of albumen in water may be detected by it. This, M. G. says he has ascertained not only with urine, but with the serum of blood. It seems to me quite strange, if this be correct, that death does not take place more often when chloroform is inhaled. M. G. says that when there is but very little albumen in a solution, (urine or serum) after a few drops of chloroform have been added to the solution, it is necessary to shake it to obtain a precipitate. The following tests of albumen are disposed in a series beginning with the least sensitive, and ending with the most sensitive : 1. Heat. 2. Pure alcohol. 3. Neutral acetate of lead. 4. Bi-chloride of mercury. 5. Nitrate of silver. 6. Nitric acid. 7. Sub-acetate of lead. 8. Tannin. 9. Creosote. 10. Chloroform. With the help of chloroform M. G. says he has ascertained that there is always in the urine of adults as well as of children a quantity of albumen which he thinks to be the seven or eight hundredth part.

2. *Means of detecting sugar in the urine.*—M. Leconte has published a paper in which he tries to show that Dr. Blot has been mistaken in admitting that there is sugar, as a normal, or rather a constant element of urine in nursing women when they are in good health. M. Leconte attributes the decomposition of the salt of copper by the urine of these women to the uric acid. But Dr. Blot had ascertained the presence of sugar not only by the precipitate of oxide of copper in making use of Fehling's test, but also with the polarimeter, and by the result of fermentation. M. Leconte, however, is right in one thing, which is that uric acid may give a precipitate with all the

tests containing a salt of copper. If we must attribute only to uric acid the large precipitate formed in treating the urine of nursing women with one of these tests, then the quantity of uric acid is very much increased in these women. A Dutch Physician, Heynsius, has recently proposed a new view of this subject ; he thinks that the substance mistaken for sugar, and acting like it, in the urine, is a peculiar one, and only differing from sugar by some few characters. Whatever may be the interpretation of the positive facts discovered by Blot, their practical value remains entire. In a nursing woman in good health, the urine precipitates oxide of copper with Fehling's or Trommer's test, while if a serious disease exists, or is to come in a day or two, there is no more precipitate.

3. *Obliteration of the superior vena cava.*—Dr. Oulmont has published a remarkable paper on this rare and little known affection. He has observed four cases and found fifteen other cases in various books or journals. He divides these cases into two categories, in one of which the obliteration is due to concretion or internal tumors, while in the other he places the cases of external pressure upon the vein. Of his nineteen cases there are five of coagulation of blood in the vein, three of internal cancer, five of cancerous tumors of the mediastinum or lungs, two of tuberculous ganglions, four of aneurisms of the aorta. Ordinarily the first symptoms are coughing and dyspnœa, sometimes amounting to intense orthopnœa. In some cases there has been blood with the mucus of the expectoration, and even a real hæmoptysis or hæmatemesis, with palpitations of the heart. In other cases the first symptoms have been cephalalgia, vertigo and cerebral congestions. In some cases a very prominent symptom of the disease, and a constant one after a time, œdema of the face has been the first observed. It begins either on one or the other side of the face, quickly extending to the whole of it, and to the forehead and pericranium. The neck and the superior limbs become afterward infiltrated, and at last the œdema reaches the chest and the upper part of the abdomen, rarely extending further down, while the inferior limbs are perfectly normal. There is in the face and other infiltrated parts a bluish color, giving the appearance of cyanosis. All the superficial veins are more or less enlarged.

After a time cephalalgia and vertigo are almost immediately produced at every movement ; sometimes there is a real attack of apoplexy.

Among the other symptoms we will point out ; insomnia, various hemorrhages (from the nose, the lungs, or the stomach), fits of suffocation, cough, etc. The pulse, strange to say, remains usually quiet, except at the end of the disease, when fever supervenes. Frequently there are palpitations, and sometimes albumen in the urine.

All these symptoms increase gradually, and, at last, delirium, coma, agitation, fever appear, and are soon followed by death. In some cases death came suddenly and quite unexpectedly. We need scarcely say that unfortunately, there is nothing to be done in the way of treatment in this disease, except complete rest, the avoidance of emotions and of stimulating food and drinks.

4. *Ophthalmia by reflex action.*—Much has been said lately of reflex disturbances of nutrition and secretion, but there is not a great deal of novelty in what has been said, as may be seen by those who will read a little old book which contains a great many facts of this kind; it is the work of a celebrated Dutch Physician of the last century, entitled, *De sympathiâ, seu consensu partium corporis humani, ac potissimum ventriculi, in statu morboso,* Dissertatio medica, Authore, H. J. Rega.—Harlemi, 1721. But whether it be new or not, it is very interesting to know that, the irritation of certain nerves particularly, may produce inflammations and other alterations of nutrition or of secretion at a great distance ; the following case is very instructive in this respect :

A man had an ophthalmia of the right eye; for many months various kinds of energetic treatment failed to cure him, and all treatment was abandoned. But the left eye also became attacked, and again various means of treatment failed to diminish the double ophthalmia. Local means being unsuccessful, general means were employed, but also without success. The face of the patient was red, injected ; he had a constant cephalalgia and a blowing sound in the ears, which prevented sleep, and he was deaf at times. The ears being examined by Dr. Busschaert, who relates this case, they were found to contain a great quantity of thick cerumen. This being taken away, almost all the symptoms disappeared at once, and, in five or six days, the ophthalmia was cured and the eyes had returned to their normal state. Dr. B. has known a patient who was cured at once of a persistent headache by the same means. We may add that epilepsy has been caused by an accumulation of cerumen and cured by its extraction. As regards ophthalmia, the branches of the fifth pair which cause it most easily by a reflex action, are the infra and the supra-orbitalis. In this is to be found the explanation of the sudden cures of ophthalmia resulting from a contusion of the frontal nerve, when this nerve is divided between the contused part and the encephalon, as has been done by Wardrop, Beck, and others.

Concerning the theory of reflex secretions there has been, for some time, a somewhat strange discussion of priority, between Dr. H. F. Campbell, of Augusta Ga., and the late Dr. Marshall Hall. Not only neither of them had any right of priority in this respect, but, still more, the questions concerning the reflex secretions and the reflex changes in nutrition, had been carried much farther than the point that these two able physicians thought they had been first to establish. The main thing now to be examined, is whether in the reflex phenomena of nutrition and secretion, the centrifugal nerves act by producing a contraction of blood-vessels, or by a special electric or nervous influence. For the readers of this review who would like to study this question, I will say that there are facts concerning it in the various works of Henle, published already in 1840 and 1841, in the treatises of physiology by Ludwig, by Donders, and by O. Funke, in the *Pathologische Physiologie* of Spiess and in my little work on epilepsy recently published in Boston.

5. *Grave jaundice; its pathology.*—M. Ozanam has well described

the symptoms of this fatal disease, the pathological anatomy of which has been recently studied M. Ch. Robin. Lately an interesting case has been observed at the *Charité* by M. Hiffelsheim. A man was brought to this hospital, presenting only these two symptoms worthy of attention ; weakness and jaundice. The mind was clear, and the patient complained of having been indisposed only for a few days. The same evening (on the admission day) he was found cold, stupid, or rather in a comatose state ; his pulse was small, very slow, and very soft ; the beatings of the heart hardly perceptible. During the night he died. No organ seemed to be diseased except the liver, which being examined by M. Robin was found to be altered exactly as in all the similar cases in which this organ has been examined by this able anatomist. The characteristic alteration consists in the destruction of the hepatic cells, which destruction has been found in almost the whole of the liver in the five or six cases observed by Robin. In place of the polyhedric cells, the microscope showed a peculiar amorphous matter, finely granulated, half solid, transparent, containing an immense quantity of granulations and *no oil.* A few altered cells filled with fatty granules were also found.

6. *Catheterism of the larynx in croup, etc.*—M. Loiseau sometime ago presented to the *Académie de Médecine,* some new instruments for the catheterism of the larynx, and a short time since he had an opportunity of showing the usefulness of the principal of these instruments, which is a laryngeal tube. A little girl, four years old, attacked with croup, was admitted at the *Hôtel-Dieu ;* M. Blondeau, the *Chef de clinique,* resolved to make use of M. Loiseau's instrument. He introduced his forefinger into the mouth, and, having reached the epiglottis, kept it up, so that it became easy to pass the tube in the larynx. The introduction of the tube in the cavity of this organ was known at once to have taken place, by the sound indicating the passage of air in the tube. An injection of a saturated solution of sulphate of copper was then made, and the tube immediately withdrawn. The child seemed to suffer only when the finger lifted up the epiglottis, and gave no sign of pain when the tube was introduced, and the injection made. The next day the child was better. Three times more the catheterism and the injection were employed by Prof. Trousseau, and after each time the child became better, and three days after the last, the child was well, though there was still a slight hoarseness. We will let this case tell its own tale, and add only that there cannot have been any mistake in the diagnosis.

7. *Treatment of malignant pustule.*—M. Raphael, a learned physician of Provins, a pupil of Nélaton, has astonished the *Académie de Médecine* by announcing that he had cured four patients attacked with this carbuncular affection, by merely applying the leaves of the walnut tree on the pustule. Many doubts have been expressed concerning the possibility of such cures, and it has been asserted that M. Raphael must have made some mistake of diagnosis. A physician of the south of France, where this affection is frequent, had already treated with success *forty* patients, by the application of walnut leaves. It is

difficult to admit that errors of diagnosis have so often been made. Two able physicians, Messrs. Salmon and Mannoury, have nevertheless tried to prove that very frequently ordinary carbuncular affections are mistaken for malignant pustules, and they assert that the only means often of deciding the nature of the disease, is to inoculate the pus in animals, and ascertain if it be contagious or not. Besides, they relate a case in which the application of walnut leaves has been followed by death.

8. *Naphtha oil against favus.*—M. Chapelle asserts that this substance cures favus very quickly. He first has the head shaved, and applies a poultice upon it, so as to render the pustules as free as possible from all the coagulated or dessicated matters. He then applies a thin layer of naphtha on the whole surface of the head. This application must be made twice a day, and the head must be washed with soap and water before each. All the purulent vesicles found must be opened, and the pus expelled. When there is pain on application of the naphtha oil, another and not exciting oil must be mixed with it.

9. *Treatment of dysentery.*—Prof. Piorry read a report on a paper of M. Hamon on this subject, at the *Académie de Médecine.* M. Hamon has seen two epidemics of dysentery, and has employed with the greatest success the sulphate of alumina and potassa in injections. In children the dose must be from one to four grammes (20 to 80 grains), and four to eight grammes in adults. In one place thirty-five patients treated by this means have been cured ; in another place, out of forty patients, two old men only have died. We remember that a physician in the French army, Dr. Barthez, has obtained great advantage of this mode of treatment in Algeria, where dysentery is very violent.

10. *Bronzed skin and disease of the supra-renal capsules.*—Our friend, M. Charcot, brought some time ago to the Société de Biologie, the supra-renal capsules of an old man, who died, after having offered all the symptoms described by Dr. T. Addison. In merely examining the capsules with the naked eye, they did not seem to be altered, but the microscope showed that their usual elements had in a great measure disappeared, and been replaced by fat ; and the reactions offered by various tests, and particularly iodine, with the normal tissue of these glands, did not exist with the tissue of those presented by M. Charcot. This is an important fact, as it renders entirely null all these cases of bronzed skins, in which the capsules not examined with the microscope, have been declared healthy.

11. *Epilepsy ; successful treatment.*—There are three cases in which epilepsy or epileptiform convulsions have been cured. In one of these cases, which is very interesting, and shows clearly the power of an irritation upon sensitive nerves, to produce epileptiform convulsions, there were larvæ of some insects in the frontal sinuses of a young girl, who was completely cured after having long been sick, as soon as the larvæ had been killed by the smoke of segars containing arseniate of soda. This curious case, sent to the *Académie des Sciences,* has been

published *in extenso*, by M. Legrand du Saulle, in the *Gazette des Hôpitaux*. Nov. 3, 1857.

The second case we have to mention is not less interesting. A man had been wounded in the head at Sebastopol ; a part of the skin and of the external table of the frontal bone had been taken away by a ball. Six months after, the patient had attacks of vertigo, and the next day real fits of epilepsy : the wound had not cicatrized. Trepanation was performed, and a piece of broken bone which irritated the dura-mater was extirpated. Since the operation there has been no more fits, and the patient now, ten months since he has been trepanned, is quite well. We have tried to show, concerning cases of this kind, that it is not the pressure on the brain, but a peculiar kind of irritation starting from the centripetal nerves of either the skin or the dura-mater, which causes epilepsy, by a reflux action on the blood-vessels of the encephalon. We will refer to our work on epilepsy for explanations on this subject, pointing out particularly our remarks upon an important case that we owe to the kindness of Prof. Van Buren.

Of the third case, we will say merely, that it is a case of abscess of the skin of the head, which had produced epileptiform convulsions, and that the convulsions were cured when the inflammation of the skin was cured. Bouchut is the physician who treated the case.

12. *Preservation of vaccine matter.*—In France this matter is sent to every physician who asks for it by a committee of the Academy of Medicine. The vaccine is preserved between two glass plates or in capillary glass tubes. M. Depaul, in a report to the Academy, remarks that this substance frequently loses its properties when it is placed between glass plates. Mr. Trousseau says that more than four times out of five he has failed in trying to vaccinate when he employed the substance kept between plates. He also asserts that capillary tubes, from which air is secluded, always preserves vaccine matter powerful for years, while if there is air with the matter it putrefies and loses its properties.

13. *Danger of carbonic acid used as an anæsthetic.*—It is well known that lately Prof. Simpson of Edinburgh, and afterward M. Follin of Paris, have reintroduced the practice of using carbonic acid as an anæsthetic. It is particularly in painful affections of the uterus that this substance has been employed. Whatever be its mode of action, which we believe to be at first a temporary stoppage of circulation in consequence of a contraction of the blood-vessels and of the agglutination of the blood-corpuscules; it truly diminishes pain for a time, but there is danger in employing it for a long while, as M. Charles Bernard has recently shown. The carbonic acid is absorbed and it produces symptoms of asphyxia, vertigo, headache, nausea, an undefined feeling of pain and weakness, etc. It is necessary, therefore, not to make use of this gas too long and in too large quantities.

SURGERY.

1. *Thoracentesis.*—French surgeons, except a few of them, are very much afraid of certain operations. Many would let a man die rather

than open the chest, whatever may be the circumstances. There are some, however, who do not hesitate to open the chest whenever they think it may prove useful to do so. Among these surgeons, considered here as very bold, we may name Sedillot, Jules Guérin, Boinet, Trousseau, etc. The number of successful operations is now sufficient to prove that the operation is quite a legitimate one. Prof. Trousseau, who recently has performed thoracentesis three times, and successfully in two of these cases, gives at length the details of the case of a man who was in as miserable a condition as possible, and who nevertheless bore the operation very well, became better after it, and lived six weeks, although he was consumptive. In America, where Dr. H. I. Bowditch and others have so often practised thoracentesis, this case will not surprise anybody; but here many persons have blamed what they call the boldness of Prof. Trousseau. In a recent communication to the Academy of Sciences, M. Sedillot has proposed some views which he considers as new and important concerning thoracentesis. In the first place he declares that the entrance of air in the chest becomes impossible, if, instead of operating *between* two ribs, the opening be made *through* a rib. He places in the opening a silver canula or india-rubber catheter. As a second rule he recommends not to withdraw the whole of the liquid (pus or serosity) effused in the pleural cavity, and if, accidentally, too great a quantity of liquid flows out, he thinks necessary to replace by an injection the same amount of fluid in the chest. The danger of the operation consists mainly, according to him, in the rupture of the pseudo-membranes and the consecutive inflammation from this cause, when too great a quantity of liquid is withdrawn at once. This idea is not so new as Prof. Sedillot imagines; it is pretty well known in America; and here, M. Boinet has grounded upon it the same mode of doing now proposed by M. Sedillot, *i. e.* to take out but a small quantity of the effusion at a time. Two cases only are mentioned by this able surgeon, in one of which the patient was completely cured, and the other lived a year, although he was in the worst circumstances.

2. *Case of fracture of the jaw in extracting a tooth.*—This is a curious case, showing the danger of persisting in efforts of extraction when the patient moves. The lower jaw was broken all along the alveolar canal so that seven teeth, of which six were healthy, were lost for the patient, together with the part of the jaw on which they were fixed. M. Désirabode, who saw the patient after the accident, states rightly that it would not have occurred had the dentist ceased to try to continue the operation at a time when the patient was throwing himself on the floor to avoid its performance.

3. *Catheterism of the urethra accomplished by Mr. Phillips, in a case in which Prof. Nélaton had failed.*—This case deserves attention in many respects, so that we will give a full account of it. A man, forty-two years old, had had blenhorrhagia several times when young, and for several years he had difficulty in expelling urine. He had frequent inclinations to expel water and could not succeed in emptying his bladder. When he was admitted in Nélaton's wards at the *Hôpital des*

Cliniques he could not expel more than drops of urine, and he suffered much at every time he made efforts to urinate. The general health of the patient had become much altered: he was cachectic. Prof. Nélaton vainly tried to pass a sound into the bladder. The house physician tried also a great many times, and for half an hour each time, and he also failed. Almost all kinds of attempts were made without success. Prof. Nélaton spoke of the case to M. Phillips, who said that he had the same opinion as Syme, of Edinburgh, and that he had never seen an inflammatory stricture through which a sound could not be passed. Besides, he thought, that as there was still an emission of drops of urine in the case mentioned, to him there was possibility of passing a catheter if a *convenient* one were employed. The next day M. Phillips saw the patient, and for two hours unsuccessful attempts were made.

The patient was placed on his feet against a wall and the surgeon tried to introduce the sound without drawing much on the penis, and without exerting any pressure able to cause the least hæmorrhage. The first instruments employed were *whale bougies*, No. 3, very fine at their point. Two strictures were passed, but a third stopped the instrument. During the last hour the patient was almost constantly in a syncopal state, and at last his syncope became so intense that any further attempt was postponed to another day. He felt better the whole day, and slept well, and had but a slight shivering in the evening. Two days after this attempt a second was made by M. Phillips, and this time it proved successful. The bougie was fixed in the canal and left there for three days. After this time the catheterism became relatively easy. M. Phillips had ascertained that there was a passage only on the superior and left part of the stricture, and by directing the point of the instrument towards this part he succeeded without great difficulty in introducing larger and larger bougies. He at last passed one as large as a goose quill. He nevertheless thought that the method of simple and gradual dilatation would not be enough to cure completely, and resolved upon dividing the strictures with the *urethrotome* of Charrière. The incisions were made at three different times, with five or six days of interval. The patient suffered but little, and the hæmorrhage, which was not considerable, stopped spontaneously. In a few weeks, the patient was able to sound himself with a large catheter, and he went out of the hospital perfectly cured.

M. Phillips attributes his constant successes to the use of *whale bougies*, which alone can preserve the form given to their point. M. Chairon, who has published the case in the *Gazette Médicale*, remarks that there has been here a cause of success which deserves attention: it is the syncopal condition of the patient. But he believes that it is the absence of blood, which he considers as a consequence of the syncope, which allows the passage of the sound. The truth very likely is, that the spasmodic contraction of the muscular elements of the urethra ceases in syncope, as it does when chloroform is inhaled by the patient.

4. *Pressure and rubbing in cases of sprain.*—In a paper presented

to the Academy of Sciences, M. Girard remarks that sprains are more dangerous than physicians imagine. He cites M. Baudens, who states that in a number of seventy-eight amputations of the leg or of the foot, sixty have had for their first cause a sprain, eighteen only being independent of this cause. This statistical document is sufficient to show the necessity of finding a good means of treatment of sprains. M. Girard relates three cases, to show the great importance of some empirical means of treatment employed with success, in many parts of France, by ignorant men. The first case is that of an officer who fell from horseback, and violently sprained the ankle of his right foot. The pain was acute, the foot swollen, and ecchymoses quickly appeared on the two sides of the joint. A person entirely ignorant of medicine and surgery began then to apply pressure and other mechanical irritation to the part, and after half an hour the swelling had diminished ; the skin had become almost normal. After two hours of frictions and tractions in every direction, the patient could walk, and in two or three days he was quite cured.

The second case reported by M. Girard, is that of a military man who fell on a staircase, violently turning his left foot, and spraining it very much. When M. G. saw him, two or three hours after the accident, he was in his bed, suffering extremely. The foot was much swollen, and ecchymoses had begun to appear. The least touch increased the pain, so that M. G. at first employed very slight frictions, and gradually pressed more and more over the foot. After having made use of these means for about three hours, the swelling and the pain had disappeared. The next day the patient was up, and since then, he has not had any trouble from his foot.

In the third case, the accident had occurred six weeks before the treatment. The foot was swollen; it had a yellowish tint, and the least touch was painful. M. G. employed pressure and rubbing for three hours, after which time any pressure could be made on the foot almost without causing pain. The patient was then told to walk, which he did with but little pain. During eight days, shampooing was applied two hours each time, and he was cured.

M. G. employed merely pressure and friction, and not at all traction, as common people do in France. Nélaton had already spoken of these means as being worthy of attention. He says : "It seems certain, according to what is stated by physicians in whom we may be confident and who have seen cases of cure, that there are real and remarkable successes."

We would not have taken notice of these facts, if, on one side, M. Girard was not a very respectable physician, and, on another side, if we had not known ourselves that there is a great deal of truth in the popular faith that some common men cure sprains better and quicker than learned doctors, and by the means above mentioned.

SYPHILIZATION.

1. *On the extinction of syphilis by inoculation of the chancrous virus.*— This is the title of a new paper of M. Sperino, of Turin, who has been

the first to accept the principal parts of the theory of Auzias Turenne. In 1851, M. S. had already announced that having inoculated many times the chancrous virus, he had ascertained, besides the correctness of the principles of syphilization, this other fact, still more important, that the symptoms of constitutional syphilis disappear by syphilization, without any other treatment. In 1853 and 1854, M. S. published many cases of cure of syphilis by repeated inoculations of chancre. M. Boeck, of Christiania, has published in 1854, 55, 56 and 57, many similar cases. Stoenberg, of Stockholm, has also published three such cases. Prof. Sigmund, of Vienna, has announced that he also had seen facts, proving the exactitude of M. Sperino. This celebrated Italian physician states that it is now proved :

1st. That syphilization gives safety as regards the syphilitic virus.

2d. That syphilization causes the disposition of the accidents of constitutional syphilis.

3d. That it ameliorates the general health of the persons submitted to this kind of treatment.

The great question to be solved is this : Is the syphilitic diathesis completely and for ever cured by syphilization.

After the use of mercury or iodide of potassium, it is not rare to see the symptoms reappear after they had completely ceased in appearance. Is it so after syphilization ? Besides, is not the organism disturbed after syphilization ? and is there no danger for children of people who have been submitted to syphilization ? etc.

To these questions M. Sperino answers :

1st. That it seems quite natural to admit the radical extinction of syphilis by syphilization, when we think that a small amount of virus creates symptoms, constantly increasing, if there is no treatment, while after the inoculation of a vast amount of virus, there is a constant decrease of the symptoms until they have completely disappeared. It has been so in more than 200 persons.

2d. There are many individuals in whom a perfect cure now persists for five, six, or seven years, and if some persons have been attacked again, it is that syphilization has not been carried far enough, or that the inoculations have been too frequent at once, or that a mercurial treatment had been used. But when new inoculations have been made, cure has been obtained.

3d. The general health after syphilization is as flourishing as possible.

4th. Constitutional syphilis, much advanced, and even a state of syphilitic cachexia, complicated with favus, has been completely cured in two women, and favus also has been cured, by syphilization alone, which is very likely the consequence of the general health having become good.

5th. A woman cured by syphilization in 1852 had a boy in good health, but unfortunately she abandoned her child and it has been impossible for M. S. to find him in the Foundling Hospital.

6th. Syphilization cures not only syphilis in adults but in children, as Mr. Boeck has shown. Out of nine children cured by M. S., three

had hereditary syphilis, which had reappeared after treatment by mercury.

7th. In two girls, æt. 13 and 21, who had taken syphilis while nursing, a dreadful state of cachexia existed, which ceased in one of them after three months, and in the other after two months and a half of syphilitic inoculations. Their health became flourishing, and regular menstruation came in the eldest.

8th. Syphilization in a case has had a very favorable influence on the production of milk in a nursery woman.

I will refer those who wish for more details, to the paper of M. Sperino, which is in the *Gazette Médicale de Paris*, 1857, p. 656.

MIDWIFERY.

1. *Application of forceps with introduction of only one hand.*—M. Felix Hakin has sent a second paper to the Academy of Medicine, on this subject. M. H. maintains that there is no cause of difficulty arising from the introduction of the whole hand into the vagina, and he insists upon the many advantages of doing so. In the usual mode of introduction of forceps, it is with the fingers of the right hand, in the interior of the vagina, that the left handle of the forceps is led, while the fingers of the left hand lead the right handle of the instrument. According to the method of M. Hakin, after having placed one of the handles of the instrument, with one on the other hand, *ad libitum*, this hand is then entirely introduced, and upon and by it the other handle of the forceps is directed, after which it becomes easier to unite the two handles than in the old method. Usually M. H. introduces the left hand.

TOXICOLOGY.

1. *Research on arsenic.*—M. Blondlot, of Nancy, the able physiologist and chemist, wrote, some time ago, a paper to prove: 1st. That putrefaction of animal matters containing arsenious acid is a cause of formation of sulphide of arsenic, and that the carbonization of tissues with sulphuric acid also is a cause of formation of this sulphide, and therefore, of a loss of arsenic which remains with the carbon and is lost. 2d. That, to avoid this loss, the carbonized matters must be washed with ammoniacal water, which dissolves the sulphide of arsenic. The liquor must be distilled and the dried matter treated, at a high temperature, with nitric acid, which transforms the sulphide into sulphuric and soluble arsenic acids.

Mr. Barby Delisle, writes on this subject, that M. Blondlot is right for the cases where carbonization is obtained by sulphuric acid, but that it is simpler to make use of nitric acid, for carbonization as it has been proposed years ago by the committee of the Academy of Sciences.

INFANTILE PATHOLOGY AND THERAPEUTICS.

Report on the Progress of Infantile Pathology and Therapeutics; prepared for the NEW YORK JOURNAL OF MEDICINE. By A. JACOBI, M.D., New York.

1. *Poisoning by rad. conii maculati.*—Two girls of from seven to eight years of age, mistaken by its similarity to the root of erodium cicutarium, took a large quantity of hemlock-root. Medical attendance was called for on the next day. *Status præsens*: constant restlessness, furious delirium, interrupted sometimes by exclamations of pain (always in the vowels *a* and *o*); pupils much dilated, sight apparently injured, hallucinations, frequent convulsions of the facial muscles, giving the countenance a frightful expression; frequent contractions of all the other muscles, particularly the spinal extensors and the flexors of the extremities; and a peculiar motion of the thumb and index, like the winding a ball of thread. Tongue red, speckled, abdomen soft, bowels not moved, urine freely passed. The cause of these symptoms was brought to light, but at a later period; it being unknown, electricity was applied, without any success; afterwards leeches to the processus mastoideus, injections, wine and beef tea. After copious vomiting and evacuation of the bowels, both of the children improved, with the exception of their walk, which remained staggering for a while.—*Gazetta Lombarda*, 1857. *Oesterreichische Zeitschrift für Kinderheilkunde*, Sept. 1857, p. 598.

2. *Poisoning by laudanum.*—A child of three weeks of age, because of restlessness, had three injections, with about thirty-five (!) drops of laudanum each, given to him. Shortly afterwards severe symptoms of poisoning made their appearance. The treatment consisted of derivating poultices upon the feet, and injections of coffee, with two drops; later one drop, of Prussic acid, each. The child got well. Blanc, in *Revue de Thérapeutique Medico-Chirurgicale*, 1857, No. 17, p. 452.

3. *Spirits of turpentine in trismus nascentium.*—H. L. Byrd reports to have seen over thirty cases of trismus nascentium (or better neonatorum), all of which terminated fatally, with the solitary exception of the one treated by the spirits of turpentine. He was induced to try this remedy from Mott's and Hutchinson's success in the cure, by the same remedy, of tetanus traumaticus. The treatment consisted of injections of inf. lini ʒij., spirits of turp. gtt. x., spir. nitr. dulc. gtt. v., ol. ric. ʒj. At the same time Dr. Byrd refers to two cases of trism. nasc., successfully treated by Gaillard and De Saussure, with *cannabis indica*.—*Charleston Medical Journal and Review*, July, 1857, p. 474.

4. *Musk in spasmus glottidis.*—Salathée asserts that he has cured twenty-two cases of spasmus glottidis out of twenty-four, by very small doses of musk, of which he prescribes $\frac{1}{12}$ or $\frac{1}{20}$ of a grain several times a day.—*Revue de Thérapeutique Médico-Chirurgicale*, 1857, No. 3.

5. *Herniotomy in a child seven weeks old.*—This operation is reported to have been performed by William Rayner, because of a stran-

gulated irreducible inguinal hernia of the right side, with stercoraceous vomiting. The operation was successful.—*London Lancet*, 1857.

6. *Recoveries and deaths after tracheotomy.*—André publishes a report on fifty-four cases of tracheotomy, performed by him. There were 15 recoveries, 39 deaths. No recovery took place in children of less than two years of age. His better success with older children is attributed by him to their greater resistance to hemorrhage, traumatic fever, diphtheritis, capillary bronchitis, and pneumonia, and to their greater docility.—*Bullétin de Thérapeutique*, tome lii., p. 471.

7. *The possibility of again suckling infants after weaning them* has been the object of a discussion in the "*Société Médico-Pratique*," at Paris. Mayer reported the case of a child ten months old, and weaned at seven months of age, which, to save from death by diarrhœa, required to have breast-milk again. The child began to suck pretty soon. A similar case was reported of a child of thirteen months of age, weaned six months before. Perrin has the case of a patient who ceased nursing her child in consequence of a mammary abscess, but had milk enough, four months later, to nurse her child.—*Revue de Thérapeutique Médico-Chirurgicale*, 1857, No. 14, p. 376.

8. *Chloride of sodium and cow's milk.*—Dr. Kuettner, of Prague, and Dr. Gumprecht, of Hamburg, mix cow's milk with the chloride of sodium, in order to make milk more digestible for both healthy and sick children, and for adults. The chloride of sodium increases the action of the digestive organs, and renders albuminous matters, and, probably, fatty matters also, more soluble. Thus acidity, flatulency, colic, diarrhœa, may be avoided. Water and milksugar alone, when added to cow's milk, have only an imperfect success.—*Journal für Kinderkrankheiten*, May and June, 1856, March and April, 1857, p. 161.

9. *A case of suppurative inflammation of the uterus, kidneys, and bladder of a newborn child.*—This case is reported by Dr. Thomas Hall, and described as "Congenital Non-secretion of Urine." A child, apparently well developed, passed no water; some thick mucus was driven through the catheter; a tumor was to be felt above the symphysis, extending half an inch above the umbilicus. The child died on the sixth day after birth. *Post-mortem Examination:* The small intestines were united, by firm bands, to the parietes of the abdomen; the peritoneum of the bladder and iliac region highly inflamed; uterus inflamed, containing pus and mucus; bladder inflamed; mucous membrane gone, but an ounce of pus in the cavity; kidneys inflamed, containing some pus.—*Northwestern Medical and Surgical Journal*, August, 1857, p. 346.

10. *A rare instance of the healing power in the infantile body.*—This case is reported by Bitot in the *Journal de Bordeaux*, 1857. A child, eight years old, was hurt by a carpenter's chisel, on the dorsal side of the joint of the third phalanx of the left fourth finger, the hand lying on a table. Dr. Bitot found the third phalanx attached to the second one by nothing except a filiform pedicle. The joint was opened throughout, the cartilages perfectly intact. After having stopped the

bleeding from the arteries, he brought the third phalanx to its place, and fastened it by two strips of plaster ; over this a circular bandage was laid round the index and the third finger, which served, thereby, instead of a splint. The hand was put on a splint and laid in an elevated posture, the child placed in bed, and the utmost attention bestowed on it both day and night. On the third day, the touch of a pin was felt on some parts of the third phalanx, but cicatrization went on very slowly, the bandages being wet every day with a fluid which, when dried, proved stiff and reddish. The tissue of the cicatrice was soft, greyish, of an apparently loose cohesion in itself, and constantly transuding a serous fluid. A perfect solidification of the new-formed tissue, checked by the extraordinary secretion of synovia, took place after more than two months, with the frequent use of a solution of tannic acid. It was some time before the third phalanx recovered its normal motion and sensibility.—*Oesterreichische Zeitschrift für Kinderheilkunde*, Sept., 1857, p. 599.

11. *Rachitis acuta.*—The character of diseases is known to differ very much according to their being either acute or chronic. That such is the case with acute and chronic pleuritis, peritonitis, hydrocephalus, none need to be told ; that the same difference may be found with rachitis, Prof. Mauthner, of Vienna, proved by facts.

A boy, nine months old, fat, with light hair, was brought to the St. Annen Hospital, at Vienna, on the 9th of March, 1857, with the physical signs of a light catarrhal pneumonia of the left side, and of intestinal catarrh. He was said to have been sick for three weeks, and to have been weaned at six months of age. The child did not cease screaming frightfully, more so when carried around than while laying in bed. There was always an expression of pain in the countenance, the lower extremities were drawn towards the abdomen, their abduction and extension being followed by an agonizing pain. After five days and nights had elapsed with constant screaming, a flat, hard swelling was perceived on the right thigh, which was all the time kept in close adduction towards the abdomen, but no alteration in the skin. This swelling was considered to originate from the periosteum, and the upper part of the thigh being flexible, the case was considered to be one of fractured thigh, with callous exudation ; the fracture being effected, probably, by some fault of the nurse's. But on the following day the tibiæ and fibulæ of both sides were found to be bent, the swelling not being so large as on the thigh. The child did not move by himself, but was several times attacked with convulsions. The left humerus was also bent, all the curvatures increased, the cranium became soft and flexible. It was now evident that the cause of all this was to be looked for in a general periosteal disease The next day the child died. The corpse looked as if broken upon the wheel, the majority of the diaphyses were bent, porous, hyperæmic, the medullary cavity dilated, the marrow reddish yellow, the periosteum thickened, loosely attached to the bone, the adjacent muscles pale, flaccid, and had, in the right femur, where the process had begun and progressed very rapidly, undergone a uniform fatty degeneration.

The next two cases described are of a similar kind ; but the post-

mortem examination of the last one, that of a girl of eleven months of age, is too instructive to be omitted. Muscles atrophied everywhere, pale, thin, fatty ; joints flabby ; cranium thin, anæmic ; both of the collar bones bent in the shape of an S ; sternum cartilaginous ; on both sides of it, about three centimetres from its longitudinal median line, from the third to the seventh ribs, deep cavities are visible, beginning on the cartilages, and reaching as far as the osseous parts of the ribs ; corresponding to these cavities, which were two centimetres deep, there were found, inside, sharp prominences of the said five ribs, the periosteum being easily removed from the epiphyses ; epiphyses porous, hyperæmic, tender ; cavities on the outside of the lungs corresponding to the curvatures of the ribs ; the pulmonary tissue atrophied, smooth, flabby ; pleura thickened and discolored ; heart situated behind the sternum ; parietes of the right ventricle very thin, a little coagulated fibrine inside ; liver tough, grey like slate, its serous membrane thickened ; spleen hard, brown ; stomach pale, flabby, its membranes almost white ; containing a thin, whitish fluid ; transverse colon expanded by gas, in the jejunum three invaginations of some inches each ; all the intestines containing thin fæces ; follicles grey ; valvula Bauhini and Peyer's glands swelled ; pancreas dry, dense, of a coarse structure ; kidneys bulky, hyperæmic ; brain pale ; more serum than is usually found in the ventricles and on the basis ; left humerus, being only ten centimetres in length, was bent to a right angle, somewhat flexible ; the osseous substance succulent, tender ; diploë with large cellules, like meshes ; cortical substance almost gone ; medullary cavity dilated ; epiphyses *not swollen at all* ; radius and ulna of equal size on both sides, both of them bent in the diaphyses, their substance cartilaginous ; the same condition to be found in the right humerus and leg, where the fibula had given way in the direction of the tibia.

Rickety degeneration of the osseous system is known to be preceded by anomalies of digestion. The grey color of the liver, the swelling of the intestinal glands, the paleness and flabbiness of the stomach, are but signs of abdominal sufferings. Prodromal symptoms like these are rarely appreciated properly, because the children look fat and round. But it ought not to be overlooked, that, but too frequently, accumulation of fat is but a proof of anomalous assimilation ; the food not reaching a sufficient degree of animalization. About as slowly as this prodromal stage, the alterations in the osseous system progress, as for instance the swellings and deformities of the epiphyses, the ceasing of longitudinal growth, the tenderness and curvatures of bones. The possibility, however, of an *acute* disease of the osseous system following the chronic prodromi, has been proved, particularly, by the first-mentioned case.

When osseous matter is no more being deposited in the osseous tissue, fat begins to predominate in its cellules. Real fatty degeneration occurs as well here as in the surrounding muscles. Nothing, therefore, is more natural than frequent fractures of the weak and flexible bones. The periosteal swellings are to be considered as so many beginnings of formation of a solid callus.

All the cases reported by Prof. Mauthner are of children less than

a year old, badly fed and born of very poor and badly developed mothers. Acute rachitis, therefore, seems to be inborn; perhaps hereditary syphilis will be found in some cases, to be the next cause; one thing cannot be denied, viz., that the acuteness of rachitis depends much on unfavorable circumstances, as to food, residence, etc. There are some remarkable differences between chronic and acute rachitis; in the first one children show, sometimes, some uneasiness and uncomfortableness, especially on locomotion, but never do we meet such agonizing pain in the acute form of the disease. Chronic rachitis affects, particularly, the epiphyses; acute, the diaphyses. Chronic rachitis never terminates by the mollification of the osseous system, described as the last stage of the acute one; but eburneation being the usual favorable result of the chronic form, may possibly be found, in future observations, terminating acute rachitis.—*Oesterreichische Zeitschrift für Kinderheilkunde*, Aug., 1857, p. 513.

CORRESPONDENCE.

Condensed milk.—We have received from Dr. E. H. JANES, secretary of the section on Materia Medica, the following synopsis of the report of that section to the Academy of Medicine on the subject of *Condensed Milk:*

A few months since some specimens of "condensed milk" prepared by Gail Borden, Jr., etc., were presented to the Academy of Medicine for approval and referred by that body to the section on Materia Medica and Botany for examination and report. The section proceeded at once to examine the specimens furnished them for the purpose of ascertaining the purity and quality of the preparation when compared with that of ordinary milk, and found the result thus far perfectly satisfactory. They next proceeded to acquaint themselves with the mode of preparation, carefully inspected the whole process from the milking of the cows to its final completion; carefully noted the temperature to which the milk was subjected, extent of vacuum, amount of evaporation, and all other points of interest connected with the subject, and as far as possible tested the value of the "condensed milk" in an alimentary, therapeutical and economical point of view, after which they reported at length to the Academy the result of their investigations.

The following are some of the more prominent points contained in this report. Pure milk consists of water, butter, casein, milk sugar, phosphates of lime, magnesia, and iron, chlorides of potassium and sodium, soda and sulphur. These comprise all the elements of nutrition combined in such proportions as to be best adapted to the wants of the young animal, and milk being the only article furnished by nature in which such a combination exists, its importance is at once established as an article of diet for young children, and hence its universal employment under all circumstances of life from infancy to old age, both in sickness and health, in savage as well as civilized society.

Its absolute importance as an article of diet, and the consequently increasing demand for its supply, especially in large cities, offers strong inducements for those dealers who are influenced entirely by motives of

cupidity, to furnish their patrons with milk adulterated in such a manner as to render it not only inferior in its nutritive qualities, but absolutely injurious, often generating disease and death, especially among young children whose diet consists mostly of this wretched compound, sold under the *sobriquet* of "pure country milk." So great is the extent of this evil, that any attempt to remedy it deserves the hearty support of the public and the cheerful coöperation of every practitioner. This enterprise Mr. Borden has undertaken, and succeeded in a manner both simple and scientific. His modus operandi consists in going far back in the country where milk can be obtained at a price much cheaper than is paid by the milk dealers. The milk, immediately after leaving the cow, is deprived of its animal heat, and then as soon as possible raised to a temperature of 175° Fahrenheit, which causes a slight deposit of a viscid albuminous substance upon the sides of the can; it is now strained, and without delay passed into a vacuum pan, where, at a temperature of about 125° Fahrenheit, it is evaporated to about one-fourth the original volume, leaving the milk with all its nutritive portion perfect, minus the greater portion of its water.

The milk thus condensed is easily transported, and may be kept without decomposition for weeks and months, and if hermetically sealed, will remain sweet for years. It is used on board Collins' steamships and goes to Europe and back without injury. It imparts a delicious flavor to coffee, fully equal to that of rich cream; without eggs it makes as good ice-cream as can be obtained anywhere in this city, and with half the usual quantity of eggs and sugar, it affords the most delicious custard. As an article of diet for young children in the absence of pure new milk it will possess a value far beyond calculation. The report concluded by assuring the Academy that the section believed the article to be nothing but pure milk deprived of most of its water; that it was the best possible substitute for pure new milk that could be obtained in this or any other city; equally adapted to all conditions of life, and often a valuable auxiliary to the physician either in private or hospital practice, and as such the section would earnestly recommend it to the favorable notice of the Academy.

Physical exploration of the ear, by means of the auriscope.—By G. GRANT, M.D., of Newark, N. J.—Perhaps one of the more important reasons why aural surgery has been a field of imposture as well as reproach to our art, has been the embarrassment which practitioners have felt, and the obstacles which they have met in examining satisfactorily the meatus externus as well as the membrana tympani. If there were a careful and complete examination in every instance, there would be but few cases either abandoned as hopeless, or given over to the hope of a spontaneous recovery, often when the nature of the disease imperatively demands surgical interference.

The most common forms of deafness may be taken to illustrate this. It is true, deafness analogous to amaurosis may exist in consequence of a lesion of the nervous system, either of the auditory nerve itself in its expansion in the labyrinth, or some other nerve in connection with the organ; but how often is the term nervous deafness employed in cases

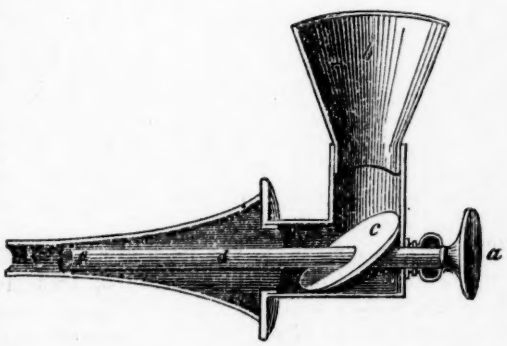
where a careful examination would have shown the disease to be the result not of any disorder of the nerves, but of the mechanical part of the apparatus!

A physician hardly ever deems it worth while to interfere in congenital deafness, and yet a large number of these cases arise from accumulations at birth of slimy caseous matter, which, suffered to remain, hardens, obstructs the canal, causes deafness; and this is pronounced incurable, while an examination would lead to discovery and removal. But if neglected, the auditory nerve, never receiving its proper stimulus, loses its excitability, rendering the patient at last really a victim to incurable deafness. In like manner, scarlatina, small pox and measles, or any of the diseases which involve the pharynx, accompanied as they are by inflammation, which travels up the eustachian tube, and attacking the lining structures of the tympanal chamber and mastoid cells, are, by suppuration and bursting of the membrana tympani, the cause of deafness. Though the loss of the membrana tympani may be supplied by artificial means, still such cases may be very much ameliorated or prevented altogether by proper anticipatory treatment which an examination would suggest.

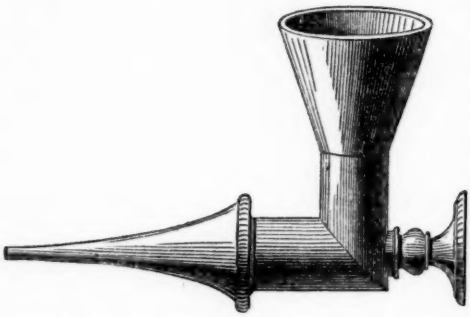
The idea of an auriscope was first mentioned by Mr. Clelland, an English surgeon (vide Essay on the deaf and dumb, by J. H. Curtis), but its invention really belongs to Dr. Grüber, of Vienna. It has since been modified by Hutchinson, with whose instrument the readers of this Journal are acquainted.

Having had frequent occasion to used Hutchinson's instrument, I became aware of some great disadvantages. In the first place, it is illumined by artificial light, and that by a very small candle, which, as it burns out, is very difficult to keep in the proper focus. Secondly, a very slight draft of air causes the flame to flicker. Thirdly, the artificial light causes an exaggeration and a discoloration of the parts viewed, so that little globules of cerumen appear as little balls of fire. Another objection is the bulk of the instrument. These difficulties I propose to obviate, by using solar light as an illuminating means, and, if this is impossible, artificial light, at such a distance, and of such intensity, as best adapted.

The instrument thus modified, consists of a concavo-convex funnel (fig., *b.*), in which the solar rays are collected, and thrown upon the mirror *c*, placed at an angle of 45°. From this mirror, the rays are thrown at right angles directly upon the membrana tympani, the instrument having been previously placed and



adjusted in the external ear. The membrana tympani is thus fully illuminated as well as the adjacent parts, in proportion as the meatal or terminal tube is more or less removed from the tympanum. The tube (*a*, *d*, *e*), passing directly through the mirror *c*, and armed at *e* with a powerful lens, serves to carry the objects illuminated to the observer's eye at *a*. The funnel, as well as the meatal cone, is lined with silver, feebly polished. The tube, *a*, *d*, *e*, can be adjusted to any focus suitable to the observer's eye, or entirely removed for insertion of a new lens, etc., etc. The mirror *c* is made of steel, highly polished. The whole instrument may be made of any material, taking care that the mirror and reflecting surfaces shall be as described.



The advantages of this instrument, thus modified, are briefly as follows: 1. It may be used with *solar* and artificial light. 2. The intensity of the light may be modified to any degree necessary. 3. It is less bulky and more simple. 4. It is cheaper; it may be made by any skillful mechanic, at a comparatively small cost. Notwithstanding it is adapted to artificial light, it is intended to be used chiefly with solar light; thus a great advantage is secured, inasmuch as solar light presents objects illuminated by it without dis oloration or exaggeration, and with extreme clearness.

The feeling, that whatever may lead to any improved mode of examining the ear, will be regarded as important; and the hope that this instrument, thus modified, will be found as useful to the profession as it has been to me, has induced me to lay this brief description before the readers of the JOURNAL.

On the feasibility of retaining the figure erect in ulceration of the bodies of the vertebræ.—By HENRY G. DAVIS, M.D., Member of the Mass. Med. Soc., etc.—It has been a generally received opinion in the profession, that little or nothing could be done in Pott's disease to prevent deformity, and that the only mode of cure was to allow the bodies of the vertebræ, adjoining that diseased, to come together and unite by anchylosis; consequently it has been supposed, that if the parts were kept asunder by mechanical appliances, the cavity would not be filled by bone, or other material answering its purpose in sustaining the spinal column.

This settled conviction has been almost an effectual bar to all efforts in the direction towards that mode of treatment, which I have found efficacious, and in which I have the fullest confidence. There remains not a doubt, in my mind, that if the cavity resulting from diseased vertebræ were kept open, so that a deposit of bone *could* take place, and

thus afford the requisite support, all *ordinary* cases would recover with a good figure. Authors even, who deny this, furnish data from which it can be reasonably inferred that such a result would follow. Sir Benjamin Brodie says, "in the advanced stage of the disease, new bone is often deposited in irregular masses on the surface of the bodies of the neighboring vertebræ." The vertebræ heretofore have not been found, (when united), in their natural positions, *because* the weight of the superimposed trunk, together with the action of the muscles, has served to tilt the vertebræ upon the oblique processes, thus approximating the bodies of the adjoining healthy vertebræ. In addition to the weight of the body and the action of the muscles anterior to the spinal column as a cause of deformity, the disease of the bone appears to impair the ability to counteract this tendency by the use of the antagonizing muscles: the patient seems to lose in a measure the connection between the brain and the muscles, somewhat in the same manner as in diseased joints and fractured limbs.

From the admissions of Sir Benjamin Brodie and others, and from our own knowledge of the efforts of nature to repair the injury in cases of diseased bone in other portions of the system, it cannot be unphilosophical to conclude, that if the cavity formerly occupied by the body of the vertebræ were kept open, bone would be deposited in sufficient quantity and in such manner as to afford perfect support to the spinal column.

As has been remarked in another paper, I have never been able to demonstrate the truth of this supposition by an autopsy, when the person had been under my treatment and recovered from the disease, with a good figure. There has recently occurred the death of a little boy in Toronto, Canada, who was under my care two years since, and recovered with a good figure. I am anxious to hear whether his spine was examined.

There are many now living in various parts of the country, who have been treated by the application of my apparatus, and with more or less success in retaining the form erect; some, who at the present time have a figure without deformity, and who have not worn any apparatus for years, thus demonstrating beyond cavil, that the lost portions have been replaced by some material that fulfills all the indications of bone.

There is at the present time, in my house, a little girl recovering with a good figure, who has been unable to sustain her weight upon her feet, or sit without leaning upon her arm. Another case, a son of S. S. Randall, Esq., superintendent of the public schools of this city, came under my care on the 28th Nov. 1856, with Pott's disease of one of the lower dorsal vertebræ, with one abcess opening in the groin, and another upon the back, just above the superior portion of the pelvis. His general health was very much impaired; he was able to walk but a short distance, and that by the aid of a cane. Since early summer he can walk miles, his health and appetite are good, and his figure erect. His state at first was such, that his parents despaired of his receiving any benefit from my mode of treatment.

The treatment of deformities has been a subject of special attention

with me for the last fifteen years, during which time there have been under my care some hundreds of cases of Pott's disease, and my conclusions are based upon the results of these cases, rather than upon the opinions of others: their treatment never placed the parts or retained them in their normal positions so that a cure *could* take place *without* deformity; therefore, their opinions as to what *would* be the result under the conditions in which the parts are placed by the application and use of an apparatus are not conclusive. Had the parts been kept asunder, and bone or other substance not been deposited so as to sustain the spinal column, then their conclusions would have been correct. If I can convince the profession, that where the body of a vertebra is destroyed by ulceration, the cavity will be filled with bone, or some material fulfilling its indications, if the parts are kept in their normal position, then the foundation will be laid to induce them to examine modes of treatment which in my hands have been effectual in retaining a good figure, or in other words, preventing the usual deformity from the disease.

The accompanying outlines of the spine show the change wrought by the use of my apparatus in a comparatively short period.

Fig. 1.

Fig. 2.

The dotted line gives the position of the spine of Wilbur Fisk Wood, son of Samuel S. Wood, of Rochester, N. Y., before the application of my apparatus. The disease, which was in the dorsal vertebræ, was of four years' standing, and deformity observable for three years. The continuous line shows the change produced by treatment, in twenty days. His health improved *as* rapidly.

The second case was that of Richard Graves, Jr., of Kinderhook, N. Y., aged 15 years. He has had Pott's disease of lumbar vertebræ for three years, producing partial paralysis of the lower extremities. The cut shows the change wrought in four weeks.

A case in which the deformities left after an operation for double harelip, and fissured alveolus were remedied by dental appliances. [With illustrations.] By WM. DALRYMPLE, D.D.S., of New York.—The patient was a very interesting girl of thirteen years of age, who had been operated upon in infancy, for double harelip. But the operation had only partially relieved the deformity. A large portion of the alveolus, with the germs of the deciduous incisor teeth, were removed by the operation,

and at the time I saw her, there was nothing left between the canines but two elemental portions of teeth which I subsequently removed.

The articulation of the teeth was such as to leave the remaining upper teeth in their entire circle, closing on the inside of the lower ones. The upper ones being firmly clasped by the teeth of the lower jaw, and of course so acting upon them as constantly to increase the deformity. The superior cuspid teeth were brought almost together; the palatine arch was so contracted that the sides or perpendicular portions were brought in positive contact, so much so, that it was difficult to pass a thin letter folder into the fissure thus formed. The lower jaw was protruding to a very great extent, the superior canines closing about three eighths of an inch inside and back of the lower ones.

It was very evident that the action of the lower teeth upon the upper ones must, within a short time, have brought the upper canines and bicuspids quite together. Add to this the contraction of the upper lip, which was greatly shortened from being cut away, and from having no teeth to support it, and the fact that the cartilage or point of the nose was drawn down, and we have a portrait of the case as I found it. Having many doubts of the practicability of any operation to overcome these manifold difficulties, I gave but little encouragement to patient or friends; yet being confident that the only remedy must come from our profession, I was willing to make an attempt. My first object was, so to speak, to unlock the jaws and to break up the constant tendency, by shutting the mouth, to increase the difficulty. This was done by first preparing a firm plate, upon which was soldered studs to keep the jaws apart, to break up the articulation, and at the same time, so arranged as to act as inclined planes in moving the two sides of the upper jaw outwards, or from each other, whenever the jaws were closed. This fixture was worn for some weeks on the lower teeth, but not making any considerable progress, I was induced in connection with it to try the bandage described by Dr. A. Westcott.*

This was worn only during the night, as then the muscles being in a relaxed state, and no voluntary resistance to its action would be exerted by the patient, the effect was doubtless nearly as great as if worn during the whole twenty-four hours. With the view of accomplishing the same end—that of spreading the jaws laterally, I also used a bar of wood, reaching from one canine tooth to the other, and of such length as to press firmly upon them; this was supported in its place by a plate that was swaged to fit accurately to the palatine portion of the upper jaw and about the necks of the teeth; to this was soldered two loops, through which was passed the wooden bar or brace. These were renewed and lengthened from day to day, and were of the greatest service in producing the desired effect, and I beg leave here to say that in all cases where bars are to be employed for similar purposes, I regard *wood* by far the best material; this is more agreeable to the sense of taste, less unpleasant in its pressure against the teeth, more easily adjusted, and retains its position far better than any metallic

* *Am. Journal of Dental Science*, vol. v., No. 2, p. 147.

substance. The practice of using metallic jack screws, and also of drilling into the teeth in order to sustain the point of the screw, may now be obviated, as such a necessity and all irritation from galvanic action may be avoided by the use of wood.*

The combined operation of the inclined planes, bandage and wooden bars, had the effect within four or five months to spread the jaws sufficiently to bring the upper bicuspids and molars of this jaw to fairly antagonize with the corresponding ones of the lower jaw, and also to greatly diminish the protrusion of the chin. While this was advancing, I was constantly bringing forward the teeth of the upper jaw by the use of wooden *wedges*, commencing with the canine teeth, which were thus moved about one eighth of an inch. The teeth thus brought forward, were kept in their places by soldering upon the plate (which had now to be re-swaged, to fit the present state of the mouth) collars or clasps. After having thus secured the canines in their new position, the next or first bicuspids were treated in the same way, so as to bring them in contact with the cuspidati. The first clasp or collar was now removed, and a similar one placed behind the bicuspidati, and so on till the entire arch was sufficiently spread in this direction. Notwithstanding I had now succeeded in correcting two important features in this deformity—that of restoring the arch of the upper jaw to its proper form, and that of retracting the under jaw—still a third difficulty remained, which bid fair to be more formidable than either of the others. I allude to the greatly contracted state of the upper lip, and the depression of the nose. Had this been properly attended to in infancy, in connection with the operation for hare-lip, it would have been comparatively an easy task; but at the present age of the patient, I had serious doubts about complete success. I made no attempt at restoring this portion of the deformity, till the operation for correcting the irregularity of the teeth and jaws was fully completed, and the mouth was in all respects prepared to receive a plate, upon which were to be attached teeth to supply the missing ones. I at first entertained the hope that this could be accomplished by carrying the plate very high up under the lips, and by giving it proper thickness, and thus to overcome the contraction by continual pressure, but in this I was disappointed—the irritation being too great to be borne by the patient, I was under the necessity of resorting to the scalpel, and to make a pretty free separation of these contracted parts (septum nasi) from the jaw, to which they were firmly attached. I had now no difficulty in preparing a plate for teeth and restorer, passing much further upward, which gave proper form to the lip and relieved the tension upon the point of

* I would here take occasion to speak of the very ingenious little "jack screw" of Dr. Dwinelle, a most effectual apparatus in many cases, yet in the present case I was wholly unable to use it, owing to excessive galvanic irritation. This, however, may be in part owing to the manner in which I applied the fixture, as Dr. D. informs me that he has applied the lifting screws in precisely similar cases, without the least galvanic irritation—indeed I believe he claims for the screws that notwithstanding they are constructed of steel, while they are loaded with zinc, the latent galvanic action thus evolved forbids their rusting or consequent irritation.

the nose. I used for the *plate, thin platina,* and to secure a smooth and unirritating surface in contact with the parts which had been cut, I returned downwards as far as the free edge of the gum of the incisors, filling up the inter-space and below the edge, to give it the desired shape, with "Allen's body" or "continuous gum." The piece was then finished in the usual manner. Upon introducing this restorer, the tension upon it, caused by the excessive pressure of the contracted lip, occasioned a considerable irritation and inflammation. However, it kindly healed in the course of a few days: the parts assumed in all respects a healthy condition, with each feature of a most unsightly deformity more perfectly corrected than I at first dared to hope.

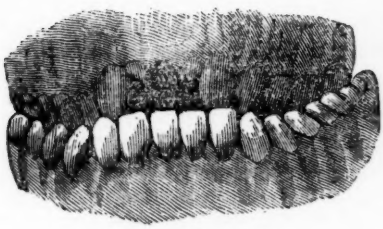


Fig. 1.

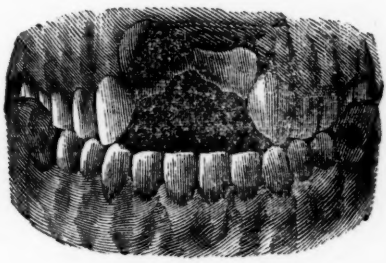


Fig. 2.

Fig. 3.

Fig. 4.

Fig. 1 represents the appearance of the mouth and articulation of the teeth before the operation was commenced; fig. 2—after the operation for expanding the jaws and regulating the teeth was completed; fig. 3—the appearance of the face before the operation was commenced; fig. 4—the appearance of the face at the time the patient was dismissed.

19 Bond street, New York.

Acute tuberculosis pulmonum with capillary fibrinous bronchitis.—Fatal in twenty-three days. By GEORGE S. HARDAWAY, M.D., House Physician, Bellevue Hospital. (Dr. McCready Visiting Physician.) Matilda Johnson, æt. 18, native of England, domestic by occupation, was admitted to Bellevue Hospital October 2d, 1857. Her mother died of phthisis, her father of cholera. Her catamenia came on when she was thirteen years old, but had never been regular, though the irregularity did not interfere with her general health. For the last year she had been subject to a slight cough, but she had not had expectoration or hæmoptysis; nor had she lost flesh; on the contrary, she was very fat when admitted, though her flesh felt soft.

She had always enjoyed excellent health up to nineteen days before admission, when she was out walking and got her feet wet. When she reached home she felt hot and feverish, and it put her out of breath so much to walk up stairs that she had to stop and sit down several times before she got to her room. From this time she began to cough with copious white expectoration and burning sensation in her chest, but she had no sharp or dull pain. She soon became very weak. Two days before admission her expectoration became yellow. It could not be ascertained what her treatment had been outside, but it was not active.

October 2d. Seen at evening visit. She was very weak; had dusky flush of cheeks; pulse, 140; respiration, 44. There was very slight œdema of lower extremities, which she had not observed. On physical examination of the chest, there was no dullness; fine sub-crepitant rhonchus over whole chest; voice and cough sounds natural. She was expectorating over a pint of muco-purulent matter a day.

Diagnosis—Capillary bronchitis, with a strong suspicion of recent deposit of turbercles.

Treatment.—Tinct. sanguinaria, turpentine stupes, beef tea, punch of brandy and milk.

October 3d.—Pulse, 148. Some difficulty in respiration.

October 4th.—Respiration easier, pulse, 152; expectoration not so copious, but she spat up about half teaspoonful of pure blood.

October 5th.—In forenoon: pulse, 160; appetite capricious; she was tired of the beef tea, and wanted something sweet; wished to sit up. At noon her lungs seemed filled with mucus, and she was given fifteen grains sulph. zinc, which vomited her freely, after which she felt better and ate half dozen oysters with relish. Afternoon visit: pulse, 144.

October 6th.—Forenoon: pulse, 144. Evening: pulse, 160. She still desired to sit up. She died rather suddenly that night at 12 o'clock, having walked to the water-closet, a distance of twelve or fifteen feet, a few minutes before.

Autopsy thirty hours after death.—Decomposition beginning. Cadaver well formed and not emaciated. *Cranium.*—not examined. *Thorax.*—Heart, healthy; lungs, the bronchial tubes were intensely inflamed; those of the left lung were filled with fibrinous casts; and the upper lobe of this lung was thickly studded with yellow tubercles. At the

lower part of this lobe posteriorly the two layers of pleura were so firmly adherent to each other for a space about the size of a silver dollar that a portion of the lung was torn off in removing it. At this part of the lung there was a tuberculous cavity about the size of a large acorn. There was no evidence of pleurisy or softening of the tubercle at any other point. *Abdomen.*—Organs healthy.

This is believed to be a case of acute tuberculosis, because, 1. The patient had no expectoration, hæmoptysis, or loss of flesh until this attack, though she had had a slight cough for year. 2. Because the tubercles were deposited in only one lung. If the cough which began a year ago had been caused by tubercles, there would most probably have been some deposit in the right lung before this time.

The slight hæmoptysis which occurred on October 4th, can be accounted for either by the tubercles or the fibrinous bronchitis.

Interesting Anomaly. Reported by JOHN G. JOHNSON, M.D., of Brooklyn; formerly House Surgeon to Bellevue Hospital, N. Y. J. G., native of Scotland, æt. forty-four, was admitted into Bellevue Hospital May 15th, and died on the 20th. As far as his history could be obtained, it was as follows: He was a maker of dial faces for clocks and watches. He had been able to support himself by this means till about one year ago, when his health failing he begged in the street. The night before his admission to the hospital he had crawled into a barber's shop, from whence he was removed to the hospital.

As the patient lay upon the dissecting table his legs were drawn up in the position in which a tailor places his legs when he sits cross-legged at his work. Both thighs were very much curved, and the legs also; the thigh and leg forming a symmetrical curve; each foot exhibited talipes varus to an extreme degree, so much so that if he had been able to walk, it would have been upon the dorsum pedis instead of on its side. The integument of the feet was very thin, showing that they had not been used in locomotion, while that of the knees and of the palms of the hands was exceedingly rough, proving that he had crawled from place to place.

Hands.—Left has only one finger and one thumb, which has more the appearance of a finger. Both the thumb and finger are of unusual muscularity and length. *Right* has two fingers and a thumb; the finger nearest to the thumb is small and seems to have acted merely as an adjuvant to the other finger in prehension; it is much shorter, more feebly developed, and curved from the thumb so as to form with the other finger a regular curve when the hand was bent in prehension. The upper extremities are well developed, showing a great contrast with the inferior extremities, which are but feebly developed.

Autopsy.—On removing the calvarium about six ounces of serum escaped. The convolutions of the brain were widely separated, showing there had been considerable effusion of serum. There were evidences of an old arachnitis.

Lungs.—Large vomicæ in apices of both, and tubercular deposit of various stages in whole of left and large portion of right.

The other viscera were found in a normal state; the genital apparatus well developed.

The right arm presented the most anomalous muscular development. The anomalies of this extremity were confined to the bones of the hand and the muscles of the forearm; in the hand two fingers and two carpal bones are wanting. The two fingers that are present, as shown by their muscular development, are the little finger and the index finger; the latter but feebly developed, and having but two phalanges. In the forearm some muscles are wanting, some entirely anomalous are present, and others deviating from the normal development only on account of the osseous deviation. In the rotation of the radius on the ulna, supination is effected directly only by the supinator brevis; S. longus is wanting; pronation is normal save only the insertion of the pronator radii teres upon the lower third of the radius. In the action of the carpus on the arm the extension is weakened by the absence of the brevior radial extensor and the flexion strengthened by muscular strips from the flexor sublimis digitorum inserted into the annular ligament at either side of the hand. In the action of the fingers and thumb both flexion and extension are performed only by a very irregular provision; the flexor sublimis and profunda act only upon the little finger. One head of the profunda arising from the posterior aspect of the ulna at the regular point of origin of the flexor carpi ulnaris. There is no direct flexion of the index finger, except by the action of an anomalous muscle acting in common on the thumb. This anomalous muscle arises by two heads. The first from the base of the coronoid process, and from the base of the olecranon and upper posterior aspect of the ulna. These heads unite and become tendinous in the middle, again divide into three muscular strips which continue muscular through the palm of the hand and are inserted into the aponeurotic expansion of the extensor tendons of each finger and thumb at the first phalanx. Flexor longus pollicis normal.

The extensor communis only on the index finger; extensor indicis normal. The extensor minimi digiti divides high up into two tendons which are inserted respectively into the first and second phalanges. The extension of the thumb is made mainly upon the second phalanx, into which are inserted both the extensor primi and extensor secundi internodii, and also a third and anomalous extensor muscle. The extensor ossis metacarpi pollicis normal. The muscles of the hand are regularly developed.

The muscular development of the left hand also presents anomalous points of some interest. In this hand there was the thumb and only one finger. The muscles inserted into this finger shows that it corresponds to the index finger of the normal hand rather than the little finger; for all the muscles that should be inserted into it, if it were the little finger, are wanting, with the single exception of the flexor carpi ulnaris which has only a single insertion into the carpus.

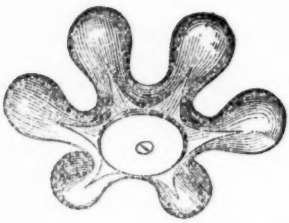
The pronator radii teres had the same peculiar insertion marked in

the right arm. Low down at the lower third of the radius, stretching across from the base of the thumb to the finger in the place of the palmar fascia was an unusually strong fibrinous development, linking the bones together, and into this was inserted the palmaris longus unusually developed. Flexor sublimis digitorum ends in a single tendon which is perforated and inserted into the base of the second phalanx. Flexor carpi radialis, normal, except very fully developed. Flexor carpi ulnaris only one insertion into the carpal bones, the insertion into the little finger is wanting. The flexor profundus had only a single tendon which perforated the tendon of the sublimis, and was inserted into the last phalanx of the finger. Flexor longus pollicis and pronator quadratus normal. Of the extensor muscles the supinator longus and extensor carpi radialis longior, both normal; while the extensor carpi radialis brevior is wanting. The extensor communis digitorum is inserted by a single tendon into the second and third phalanges of the finger; while the extensor carpi ulnaris and minimi digiti are wanting. Anconeus normal. All the deep extensor muscles of the arm and hand are normal.

The lower extremities, not having been used in locomotion, were examined only in regard to their osseous peculiarities. The acetabulum and head of right femur closely approximate to anterior and inferior spinous process of ilium. There is true anchylosis of the knee joint, the femur and tibia forming a symmetrical curve; the knee joint completely filled with the osseous deposit, no traces of it being left save on the antero-inferior aspect, where there is a slight fissure. Patella about $\frac{1}{6}$ normal size lying on the external condyle of the femur, but separated from it by a large and very strong bursa. Fibula entirely absent, no rudimentary indication of it. There was only a single tarsal bone which bore some resemblance to an os calcis; three metatarsal bones were articulated to this, and three toes with two phalanges each; the first phalanges of the internal and middle toes were terminated at tarsal extremity. The left lower extremity was as anomalous as the right. The femur and tibia have both the same curve, while the acetabulum as closely approximates the anterior inferior spinous process. There is no anchylosis of the knee joint, but in place of that we have two patella, one above the other, separated about $\frac{1}{2}$ an inch, the interspace being filled with strong tendinous band. There is also in this leg an entire absence of fibula, and no signs even of rudimentary development. The os calcis is the only bone of the tarsus—the metatarsal bones, three in number, articulate directly to this, and the toes, which are three in number, have each no phalanges.

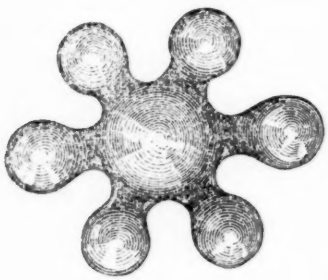
The skeleton is preserved with its ligamentous attachments in the Pathological museum of Bellevue Hospital.

A new form of Truss. By J. W. Riggs, M.D.—The instrument here represented, it will be seen, is radically different in form (and is believed to be also in its operation) from any truss hitherto known to the profession. The pad consists of a series of balls (see illustrations), knobs or protu-



External Surface.

berances, so arranged as to surround and firmly embrace all the tissues concerned in the formation of the herniał openings, and in such manner as that the entire force or pressure of the spring is exerted at separate and distinct points or intervals, along and contiguous to the inguinal canal on either side, and also on each side of both the external and internal rings. The advantages gained by this peculiar construction, and which will at once suggest themselves to the mind of the intelligent surgeon, are several, and some of these are believed to be of paramount importance in the treatment hernia—whether with a view to its radical cure or temporary relief only. 1st, Having many distinct bearings upon the surface, no movement of the body can possibly displace it. 2d, It allows the free admission of air, and thus prevents the heat and excoriation, so common, especially in warm weather, to the use of the ordinary truss. 3d, It offers no obstacle whatever to the free circulation of blood, but on the contrary, it necessarily invites and invariably causes an *increased* influx of blood throughout the subjacent tissues, and thus secures a positive *thickening* and *strengthening* of these parts, instead of the *attenuation* and *loss* of *substance* by absorption, which *necessarily* and *invariably* results from the use of a pad with a continuous convex bearing. Hence the decided advantages of this over the convex pad, for the radical cure of the malady. 4th, Every surgeon is aware of the ease and certainty with which, in the *worst cases*, the escape of the viscera is prevented, by the slightest pressure with the end of the finger properly applied, either over the rings or the inguinal canal, while in the same case, no amount of pressure with the *whole hand* would suffice to prevent their descent. Upon this principle, then, it is easy to see how this pad, with its numerous "finger ends," so to speak, possesses great advantages simply as a retaining-truss. Again, should the instrument be partially displaced, the intestine would be almost certain to encounter in its passage some one or more of these nodules, which would effectually prevent its escape. Finally, this instrument may be worn for years without producing absorption to any injurious extent—without injury to the spermatic cord, and in cases of long standing, where, from the use of an improper truss, or from other causes, the openings have become much distended, thus rendering the use of a prominent convex pad a matter of necessity; in all these, this instrument can be converted at pleasure into a convex pad, with a



Internal Surface.

highly polished surface, by simply placing underneath the balls a thin shell or hollow cone, with which every truss is provided for that purpose whenever required.

It is deemed worthy of mention, also, that this truss will be constructed throughout of water-proof material.

MISCELLANEA.

Questionable advertisements.—The *Boston Medical and Surgical Journal*, of a recent date, contains a well-written article on this subject, in which it condemns with just severity the practice of those religious newspapers which crowd their advertising columns with the most irrational, and often obscene puffs of nostrums. It is unquestionable that the venders of these poisonous compounds seek the religious press as by far the most successful method of imposing upon the credulous public. The very medium gives them a color of indorsement by the editor of the sheet from which the religious community obtains its knowledge of the progress of the Christian church, and its weekly lessons in good morals and practical religious life. The remedy for this evil is with the readers of the religious papers—with the community at large. We should appeal in vain to the proprietors of these periodicals to discontinue such publications, if we based our appeal simply upon the injury it inflicts upon good morals, even upon the progress of true Christian principles. The nostrum-vender, with his money, has a power against which the public good, the interests of the church, will contend in vain. Let the community cease to patronize such papers, and then, and then only, we fear, will the appropriate remedy be applied.

We commend the following extracts from the article referred to, to the attention of those of our readers who take religious papers:

"To justify our strictures, let any cool-minded, sensible person judge of the *truth*, and more especially of the ultimate and even direct *moral* bearing of the following extracts, which we make from an advertisement in the *Christian Witness*, of September 18th, 1857. If a religious paper is to be sustained, in any degree, by such means, we hope its props will be knocked from under it immediately.

"Side by side with a piece entitled the '*Lost Sheep*,' in the '*Children's Department*,' appears the advertisement headed 'Grindle's Ancient and Celebrated Japanese Life Pills,' which, the advertisers, under the protection of the clerical and lay authority engaged in *witnessing* for and *advocating* the Church, 'offer on a more extensive scale,' after having 'tested them in the worst forms of disease, and after having been urged to do so by eminent physicians who have tried them to their satisfaction.' We should like to see the names of these 'eminent physicians;' for to *us*, this is either totally untrue, or else it charges a feebleness and incapacity upon physicians which we cannot credit.

"Hear the respectable advertiser further, always under the auspices of the Church—*proh pudor!* 'Performing cures where every other remedy had failed, we feel it our duty to spread the glad intelli-

gence to every family of the globe. * * * Parts that were even decaying with disease are restored to a healthy, vigorous action, and disease eradicated as if by magic, leaving the system in a robust condition and less predisposed to contract disease again, of whatever kind. Possessing such penetrating and healing virtues, their success must be inevitable.' This is fine trash for the proprietors of a religious newspaper to present to their readers—do these gentlemen realize their responsibility? But the worst is yet to come: the advocate of the Church admits into its columns the following choice language. 'These ANCIENT PILLS are also an *invaluable* remedy for females suffering from suppression of the menses, the cause of so many declines and female weakness.' Aside from the poor grammar here displayed, we would simply ask the reverend editor, and the publisher, who is a communicant of the Church, if they do not *yet* know that phraseology nearly identical with this is the favorite dodge of the abortion-nostrum venders, whose advertisements fill many of our daily papers, *usque ad nauseam?* If they do not know this, it is time they did; and their first duty is to purge their paper of such declarations, which, even if not made with the *intent*, still bear the *odor* of evil-doing.

"As these, and similar, advertisements in no way advance the religious welfare of the people, but rather the reverse, that plea cannot be urged in extenuation of their presence in a professedly religious paper. There can, then, be but one other object, the wish for whose attainment is cogent enough to effect this purpose; and that is, the amount realized for the insertion of the vile paragraphs. Do, then, the proprietors of religious papers acknowledge that they willingly derive support from such sources? If so, we fearlessly say, better never a religious paper in the land! If these notices *must* be published, to poison, both physically and morally, the readers who peruse them, let, at least, the guardians of our holy religion shake their skirts free from such pollution! And let honest editors, whether their sheet be secular or religious, hesitate to issue such unwarrantable promises, such assertions that the slightest examination must falsify, such masked wickedness and such money-seeking, under groundless pretences."

The rights of authors.—Among the varieties of periodical medical literature, the discussion of rival claimants to priority in discoveries, operations, etc., is to us the least interesting, because the least profitable and satisfactory. It is scarcely possible to enunciate a supposed new principle now-a-days, without arousing a score of rival claimants, and no extent of reclamation, or power of declamation can compel any party to retire from the contest. We generally pass these wordy battle-fields with the simple wish that the principle or truth at issue, if of value to the profession, may not perish in the conflict, but, if possible, be thereby rendered more practically useful.

It must not be inferred from these remarks that we have no sympathy with the true discoverer, the original investigator, in his efforts to establish and maintain his just rights and honors. He not only has our sympathy, but our support in his disagreeable and unrewarded task. But the history of nearly every contest (and they are innumera-

ble) for priority in discovery in the science or practice of medicine, will prove that it has been carried on in bitterness, and ceased without a conqueror. And whoever sets himself deliberately down to the task of investigating the "rights of authors," will too often find himself involved in a labyrinth from which he finds no clue to escape.

We have been led to these remarks by the frequent receipt of pamphlets relating to the controversy in regard to the so-called *Excito-secretory system of nerves.* The rival claimants to the discovery of this supposed relation between the spinal and ganglionic nerves, are the late Dr. Marshall Hall of London, and in this country, Prof. Campbell of Ga., Prof. Allen, of Mich., and Prof. Paine, of N. Y. Of the American claimants to priority, we do not hesitate to accord to Prof. Paine the merit of being the first to enunciate these views, both in his lectures and in his publications. We had occasion, however, to notice this controversy some three years since, and then remarked, "if we are not mistaken similar views have been advanced at a still earlier date." In the report of Dr. Brown Séquard, in the present number of this journal, it will be seen that our impressions in regard to the earlier literature of this subject are confirmed by this distinguished and competent authority. We need, therefore, but refer those interested in this controversy to the remarks of this writer.

Journal of Physiology.—We have received the prospectus of a periodical having the foregoing title, which is to be published quarterly, at Paris, commencing on the first of January, 1858, and edited by E. Brown Séquard, with whom are associated Robin, Roget, and Thozlan. Each number will contain 160 to 200 pages, consisting of original articles, which are to form the largest portion, foreign memoirs, critical analysis of books, and a review of the progress of physiology in France, and other countries. The subscription price to the American subscriber is 25 francs; and may be obtained of M. Penington, Philadelphia.

The distinguished editor of this prospective journal is so well and so favorably known to the American medical profession, that it requires no assurances from us of the undoubted merit of the work. To those interested in the study of physiology, the first numbers will present unusual attraction, as they are to contain a detailed history of the progress of physiology during the years 1855 and 1856.

Report of the surgeon of the Middlesex hospital, London, on Dr. Fell's treatment of cancer.—It will be seen by referring to the Review department of this number, that the novelty in the treatment of cancer, which the learned (?) surgical staff of the Middlesex Hospital accord to Dr. Fell's method, namely, that of incising the cancerous tissue before the application of the caustic, is not new, but in fact, was a favorite practice of some of their *own* eminent, but evidently long-forgotten, surgeons. The humiliation of these *savans*, who have been for the last year gravely sitting in judgment upon one of the most transparent systems of quackery yet practised, is complete. They are condemned by the voice of their own fathers, who have

arisen from the dead to claim the honors which their degenerate sons have attempted to confer upon a shallow empiric.

Bellevue Hospital.—The Committee of the Board of Alms-House Governors, to whom was referred the resolution of inquiry as to the expediency of introducing the homœopathic practice into this institution, have reported unfavorably to any change in the medical Board, and deprecate the introduction of any other system of medical practice than that now employed.

To Readers.—We are gratified to be able to announce that in future we have the promise of bi-monthly reports on the *Recent Advances of the Medical Sciences* in France, by DR. BROWN SÉQUARD, the first of which appears in the present number.

The first of a series of bi-monthly reports on the progress of *Infantile Pathology and Therapeutics* also appears in the present number by DR. JACOBI, of this city, a gentleman who has made this department of medicine a special study, and has access to the current medical literature of this and foreign countries.

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CONTENTS.—NO. II.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. I.—Difficult Cases of Labor. By GEORGE T. ELLIOT, Jr., M.D., Physician to Bellevue Hospital, and to the Nursery and Child's Hospital, New York, ... 153

ART. II.—Report of a Case of Hydrophobia, with Remarks. By GEO. A. PETERS, M.D., Physician to the Nursery and Child's Hospital, etc., New York, ... 172

ART. III.—Two Cases of Exsection for Caries. By C. E. ISAACS, M.D., Consulting Surgeon to Kings County and Blackwell's Island Hospitals, ... 182

ART. IV.—Fractures of the Clavicle. By FRANK HASTINGS HAMILTON, M.D., Professor of Surgery in the Medical Department of the University of Buffalo, New York, . . . 185

ART. V.—Practical Suggestions on the Formation of Secondary Abscesses. By WM. S. BOWEN, M.D., of New York, . . 210

ART. VI.—On the Radical Treatment of Reducible Inguinal Hernia, with the Description of a New Instrument, and a Report of successful Cases. By J. W. RIGGS, M.D., of New York, . 214

ART. VII.—Address Delivered at the Commencement of the Winter Course of Clinical Instruction in the Bellevue Hospital, on the 19th of October, 1857 : WASHINGTON SMITH, ESQ., Governor of the Alms-House, Presiding. By JOHN W. FRANCIS, M.D., LL.D., President of the Medical Board, and Senior Consulting Physician of the Bellevue Hospital. Reported by Dr. GEO. F. SHRADY, ... 226

ART. VIII.—Report of the Proceedings of Medical Societies and of Hospital Practice. New York Academy of Medicine. Regular Meeting, Jan. 6, 1858, DR. BATCHELDER, President (continued from page 86), ... 241

PART II.—CRITICAL ANALYSIS.

PAGE

ART. IX.—Lectures on Diseases of Women. By CHARLES WEST, M.D., etc., etc. Part I. Diseases of the Uterus. Philadelphia: Blanchard & Lea, 1857, pp. 316. 254

ART. X.—Diagnostik der Tumoren des Uterus ausserhalb der Schwangerschaft und des Wochenbetts. Von. DR. B. BRESLAU. München: Christian Kaiser, 1856, ... 262

ART. XI.—A collection of Remarkable Cases in Surgery. By PAUL F. EVE, M.D., Professor of Surgery in the Medical Department of the University of Nashville. Philadelphia: J. B. Lippincott & Co., 1857, 8vo. pp. 858. 265

PART III.—MEDICAL RETROSPECT.

Report on the recent Advances of the Medical Sciences in France; prepared for the NEW YORK JOURNAL OF MEDICINE. By E. BROWN-SÉQUARD, M.D., Professor in the Cooper Institute, New York, ... 268

Report on the Progress of Infantile Pathology and Therapeutics; prepared for the NEW YORK JOURNAL OF MEDICINE. By A. JACOBI, M.D., Physician to the Children's Department of the (Canal street) German Dispensary of the City of New York, . 277

General Diseases, ... 277

Diseases of the Digestive Organs, ... 277

Respiratory Organs, ... 280

Circulatory Organs, ... 282

Uropoietic and Sexual Organs, ... 284

Nervous System, ... 284

Sensory Organs and Acute Exanthems, ... 287

Motory Organs, ... 288

Notices of Recent Works, ... 289

CORRESPONDENCE.

Apparatus for the Treatment of Curvatures of the Spine, . . 292

Case of Asphyxia from Inhalation of Chloroform—Successful Application of the "Ready Method," 293